

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:25:44 ; Search time 25.597 Seconds  
(without alignments)  
540.877 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1586107 seqs, 282547505 residues

Total number of hits satisfying chosen parameters: 1586107

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : A\_Geneseq\_29Jan04:\*

1: geneseqp1980s:\*

2: geneseqp1990s:\*

3: geneseqp2000s:\*

4: geneseqp2001s:\*

5: geneseqp2002s:\*

6: geneseqp2003as:\*

7: geneseqp2003bs:\*

8: geneseqp2004s:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query				Description
		Match	Length	DB	ID	
1	260	100.0	49	2	AAY42855	Aay42855 Human gro
2	260	100.0	92	2	AAY42856	Aay42856 Human gro
3	260	100.0	107	2	AAY42860	Aay42860 hGH-mini
4	260	100.0	134	2	AAW92265	Aaw92265 Human ant
5	260	100.0	140	1	AAP91041	Aap91041 Human gro
6	260	100.0	150	2	AAY42861	Aay42861 Chimeric
7	260	100.0	192	1	AAP90129	Aap90129 Human gro
8	260	100.0	192	2	AAW92264	Aaw92264 Human ant
9	260	100.0	261	1	AAP91299	Aap91299 Human ner

10	260	100.0	262	1	AAP61033	Aap61033 Human bet
11	260	100.0	262	2	AAR11740	Aar11740 Human gro
12	260	100.0	310	2	AAR03255	Aar03255 Fusion pr
13	257	98.8	144	2	AAR05313	Aar05313 Segment o
14	256	98.5	204	5	ABB77327	Abb77327 Human gro
15	255	98.1	138	1	AAP81226	Aap81226 Sequence
16	255	98.1	179	5	AAM47922	Aam47922 Human GH-
17	255	98.1	191	1	AAP60016	Aap60016 Sequence
18	255	98.1	191	2	AAO20110	Aao20110 Protein s
19	255	98.1	191	2	AAW71289	Aaw71289 Human gro
20	255	98.1	191	2	AAY15809	Aay15809 Primary a
21	255	98.1	191	2	AAY04397	Aay04397 Mutant hu
22	255	98.1	191	2	AAY04396	Aay04396 Natural h
23	255	98.1	191	3	AYY78425	Aay78425 Human gro
24	255	98.1	191	4	AAO17485	Aao17485 Human gro
25	255	98.1	191	4	AAO17486	Aao17486 Human gro
26	255	98.1	191	5	ABG31865	Abg31865 Mature hu
27	255	98.1	191	5	ABG31863	Abg31863 Mature hu
28	255	98.1	191	5	ABG31859	Abg31859 Mature hu
29	255	98.1	191	5	ABG31860	Abg31860 Mature hu
30	255	98.1	191	5	ABG31866	Abg31866 Mature hu
31	255	98.1	191	5	ABG31857	Abg31857 Mature hu
32	255	98.1	191	5	ABG31861	Abg31861 Mature hu
33	255	98.1	191	5	ABG31862	Abg31862 Mature hu
34	255	98.1	191	5	ABG94887	Abg94887 Human gro
35	255	98.1	191	5	ABG94905	Abg94905 Human gro
36	255	98.1	191	5	ABG94932	Abg94932 Human gro
37	255	98.1	191	5	ABG94967	Abg94967 Human gro
38	255	98.1	191	5	ABG94975	Abg94975 Human gro
39	255	98.1	191	5	ABG94890	Abg94890 Human gro
40	255	98.1	191	5	ABG94894	Abg94894 Human gro
41	255	98.1	191	5	ABG94899	Abg94899 Human gro
42	255	98.1	191	5	ABG94902	Abg94902 Human gro
43	255	98.1	191	5	ABG94925	Abg94925 Human gro
44	255	98.1	191	5	ABG94933	Abg94933 Human gro
45	255	98.1	191	5	ABG94940	Abg94940 Human gro

#### ALIGNMENTS

RESULT 1  
 AAY42855  
 ID AAY42855 standard; protein; 49 AA.  
 XX  
 AC AAY42855;  
 XX  
 DT 19-JAN-2000 (first entry)  
 XX  
 DE Human growth hormone (hGH) N-terminal fragment #1.  
 XX  
 KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;  
 KW conformation; chimeric protein; cleavable; recombinant; production;  
 KW yield.  
 XX  
 OS Homo sapiens.  
 XX

PN WO9950302-A1.  
XX  
PD 07-OCT-1999.  
XX  
PF 31-MAR-1998; 98WO-CN000052.  
XX  
PR 31-MAR-1998; 98WO-CN000052.  
XX  
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.  
XX  
PI Gan Z;  
XX  
DR WPI; 1999-610839/52.  
XX  
PT New chimeric proteins containing human growth hormone fragment, used  
PT particularly for the production of human insulin.  
XX  
PS Claim 4; Page 28; 46pp; English.  
XX

CC This sequence represents an N-terminal fragment of human growth hormone  
CC (hGH) which is a component of a chimeric protein, hGH-mini-proinsulin  
CC (AY42860). The hGH portion of the chimeric protein acts as an  
CC intramolecular chaperone (IMC) for the insulin precursor, enabling it to  
CC fold correctly. A cleavable peptide linker with a C-terminal Arg residue  
CC (AY42857) enables the hGH portion of the chimeric protein to be removed  
CC after folding has taken place. Production of recombinant human insulin  
CC via an hGH-proinsulin chimeric protein can provide human insulin with  
CC correctly linked cysteine bridges with fewer necessary procedural steps,  
CC and hence resulting in a higher yield of human insulin. The IMC sequences  
CC not only protect insulin sequences from intracellular degradation by a  
CC microorganism host, but also promote the folding of the fused insulin  
CC precursor, facilitate the solubility of the fusion protein and decrease  
CC the intermolecular interactions among the fusion proteins, thus allowing  
CC folding of the fused insulin precursor at commercially useful high  
CC concentrations. The procedural steps of cyanogen bromide cleavage,  
CC oxidative sulphitolsis and related purification steps can thus be  
CC eliminated, along with the use of high concentrations of mercaptan or the  
CC use of hydrophobic absorbent resins

XX  
SQ Sequence 49 AA;

Query Match 100.0%; Score 260; DB 2; Length 49;  
Best Local Similarity 100.0%; Pred. No. 3.2e-25;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 2  
AY42856  
ID AY42856 standard; protein; 92 AA.  
XX  
AC AY42856;  
XX  
DT 19-JAN-2000 (first entry)

XX  
DE Human growth hormone (hGH) N-terminal fragment #2.  
XX  
KW Growth hormone; chaperone; intramolecular; insulin; precursor; folding;  
KW conformation; chimeric protein; cleavable; recombinant; production;  
KW yield.  
XX  
OS Homo sapiens.  
XX  
PN WO9950302-A1.  
XX  
PD 07-OCT-1999.  
XX  
PF 31-MAR-1998; 98WO-CN000052.  
XX  
PR 31-MAR-1998; 98WO-CN000052.  
XX  
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.  
XX  
PI Gan Z;  
XX  
DR WPI; 1999-610839/52.  
XX  
PT New chimeric proteins containing human growth hormone fragment, used  
PT particularly for the production of human insulin.  
XX  
PS Claim 5; Page 28; 46pp; English.  
XX  
CC This sequence represents an N-terminal fragment of human growth hormone  
CC (hGH) which is a component of a chimeric protein (AAV42861) which also  
CC contains a human insulin precursor (AAV42859). The hGH portion of the  
CC chimeric protein acts as an intramolecular chaperone (IMC) for the  
CC insulin precursor, enabling it to fold correctly. A cleavable peptide  
CC linker with a C-terminal Arg residue (AAV42857) enables the hGH portion  
CC of the chimeric protein to be removed after folding has taken place.  
CC Production of recombinant human insulin via an hGH-proinsulin chimeric  
CC protein can provide human insulin with correctly linked cysteine bridges  
CC with fewer necessary procedural steps, and hence resulting in a higher  
CC yield of human insulin. The IMC sequences not only protect insulin  
CC sequences from intracellular degradation by a microorganism host, but  
CC also promote the folding of the fused insulin precursor, facilitate the  
CC solubility of the fusion protein and decrease the intermolecular  
CC interactions among the fusion proteins, thus allowing folding of the  
CC fused insulin precursor at commercially useful high concentrations. The  
CC procedural steps of cyanogen bromide cleavage, oxidative sulphitolytic  
CC and related purification steps can thus be eliminated, along with the use  
CC of high concentrations of mercaptan or the use of hydrophobic absorbent  
CC resins  
XX  
SQ Sequence 92 AA;

Query Match 100.0%; Score 260; DB 2; Length 92;  
Best Local Similarity 100.0%; Pred. No. 6.5e-25;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db

1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 3

AAV42860

ID AAV42860 standard; protein; 107 AA.

XX

AC AAV42860;

XX

DT 19-JAN-2000 (first entry)

XX

DE hGH-mini-proinsulin chimeric protein.

XX

KW Insulin; precursor; growth hormone; chaperone; intramolecular; folding;  
KW conformation; chimeric protein; cleavable; recombinant; production;  
KW yield.

XX

OS Synthetic.

OS Homo sapiens.

XX

PN WO9950302-A1.

XX

PD 07-OCT-1999.

XX

PF 31-MAR-1998; 98WO-CN000052.

XX

PR 31-MAR-1998; 98WO-CN000052.

XX

PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.

XX

PI Gan Z;

XX

DR WPI; 1999-610839/52.

XX

PT New chimeric proteins containing human growth hormone fragment, used

PT particularly for the production of human insulin.

XX

PS Claim 13; Page 30; 46pp; English.

XX

CC This sequence represents a chimeric protein, hGH-mini-proinsulin. This  
CC chimeric protein contains an N-terminal fragment of human growth hormone  
CC (hGH) of the sequence given in AAV42855, a cleavable peptide linker  
CC (AAV42857), and a human insulin precursor comprising insulin A and B  
CC chains (AAV42859). The hGH portion of the chimeric protein acts as an  
CC intramolecular chaperone (IMC) for the insulin precursor, enabling it to  
CC fold correctly. The cleavable peptide linker has a C-terminal Arg residue  
CC which enables the hGH portion of the chimeric protein to be removed after  
CC folding has taken place. Production of recombinant human insulin via an  
CC hGH-proinsulin chimeric protein can provide human insulin with correctly  
CC linked cysteine bridges with fewer necessary procedural steps, and hence  
CC resulting in a higher yield of human insulin. The IMC sequences not only  
CC protect insulin sequences from intracellular degradation by a  
CC microorganism host, but also promote the folding of the fused insulin  
CC precursor, facilitate the solubility of the fusion protein and decrease  
CC the intermolecular interactions among the fusion proteins, thus allowing  
CC folding of the fused insulin precursor at commercially useful high  
CC concentrations. The procedural steps of cyanogen bromide cleavage,

CC oxidative sulphitolytic and related purification steps can thus be  
CC eliminated, along with the use of high concentrations of mercaptan or the  
CC use of hydrophobic absorbent resins

XX

SQ Sequence 107 AA;

Query Match 100.0%; Score 260; DB 2; Length 107;  
Best Local Similarity 100.0%; Pred. No. 7.7e-25;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

QY 1 MFPTIPLSRLFDNAMLRAHRLHQIADFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||

Db 1 MFPTIPLSRLFDNAMLRAHRLHQIADFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 4

AAW92265

ID AAW92265 standard; protein; 134 AA.

XX

AC AAW92265;

XX

DT 08-JUN-1999 (first entry)

XX

DE Human anti-angiogenic peptide 16K hGH Met-1Pro133.

XX

KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis; growth hormone; hGH; hGH-V; capillary endothelial cell proliferation; placental vascularisation; pregnancy; treatment; angiogenic disease; tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation; arthritis; atherosclerotic plaques; corneal graft neovascularisation; wound healing; proliferative retinopathy; macular degeneration; trachoma; granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome; psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion; ulcer; leukaemia; reproductive disorder; contraceptive agent; gene therapy; pre-eclampsia; intrauterine growth retardation; placental dysfunction.

XX

OS Homo sapiens.

XX

PN WO9851323-A1.

XX

PD 19-NOV-1998.

XX

PF 12-MAY-1998; 98WO-US009691.

XX

PR 13-MAY-1997; 97US-0046394P.

XX

PA (REGC ) UNIV CALIFORNIA.

XX

PI Weiner RI, Martial JA, Struman I, Taylor R;

XX

DR WPI; 1999-045192/04.

DR N-PSDB; AAX01707.

XX

PT New anti-angiogenic peptides - comprise N-terminal fragments of human  
PT placental lactogen, human growth hormone, growth hormone variant or human  
PT prolactin.

XX

PS Claim 4; Page 49-50; 87pp; English.

XX

CC This invention describes novel human anti-angiogenic peptides derived from 10 to 150 consecutive amino acids selected from the N-terminal end of human placental lactogen (hPL), human growth hormone (hGH), growth hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit capillary endothelial cell proliferation and organisation (ii) inhibit angiogenesis in chick chorioallantoic membrane and (iii) binds to at least one specific receptor which does not bind an intact full length hGH, hPL, prolactin or hGH-V. The invention also describes a method for diagnosing a probable abnormality of placental vascularisation during pregnancy. The peptides can be used for treating an angiogenic disease in a subject, for inhibiting tumour formation or growth in a patient or for modulating vascularisation of a patient's placenta. In particular, the peptides can be used for preventing or treating e.g. malignant tumours, angiofibroma, arteriovenous malformation, arthritic such as rheumatoid arthritis, atherosclerotic plaques, corneal graft neovascularisation, delayed wound healing, proliferative retinopathy such as diabetic retinopathy, macular degeneration, granulations such as those occurring in haemophilic joints, inappropriate vascularisation in wound healing such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis, pyogenic glaucoma, retrothalamic fibroplasia, scleroderma, solid tumours, Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers, leukaemia, and reproductive disorders such as follicular and luteal cysts and choriocarcinoma. They can also be used as contraceptive agents. DNA encoding the peptides can be used in gene therapy. The measurement of abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL can be used in assays for impairment of vascular development associated with pre-eclampsia, intrauterine growth retardation, and placental dysfunction

XX

SQ Sequence 134 AA;

Query Match 100.0%; Score 260; DB 2; Length 134;  
Best Local Similarity 100.0%; Pred. No. 9.8e-25;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy

1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|||||||||||||||||||||||||||||||||||||||||||||||||||||

Db

1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 5

AAP91041

ID AAP91041 standard; protein; 140 AA.

XX

AC AAP91041;

XX

DT 24-OCT-2003 (revised)

DT 14-DEC-1989 (first entry)

XX

DE Human growth hormone segment.

XX

KW Human growth hormone; fusion protein; thrombin; geriatric dementia;  
KW nervous disorders; human nerve factor.

XX  
OS Homo sapiens; (human).  
XX  
PN EP329175-A.  
XX  
PD 23-AUG-1989.  
XX  
PF 17-FEB-1989; 89EP-00102795.  
XX  
PR 19-FEB-1988; 88JP-00035042.  
XX  
PA (TOYJ ) TOSOH CORP.  
XX  
PI Ohtsuka E;  
XX  
DR WPI; 1989-243092/34.  
XX  
PT New human nerve growth factor gene encoding fusion protein - having  
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.  
XX  
PS Disclosure; Page 21; 38pp; English.  
XX  
CC Human growth hormone segment, used at the N-terminal of a fusion protein,  
CC which contains a thrombin recognition site, and human beta nerve growth  
CC factor (beta-NGF) at the C-terminal. Beta-NGF can be used to control  
CC geriatric dementia and other nervous disorders, and can be released from  
CC the fusion protein by incubation with thrombin (see AAN90577-8, AAP91034,  
CC AAP91299). (Updated on 24-OCT-2003 to standardise OS field)  
XX  
SQ Sequence 140 AA;

Query Match 100.0%; Score 260; DB 1; Length 140;  
Best Local Similarity 100.0%; Pred. No. 1e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 6  
AAY42861  
ID AAY42861 standard; protein; 150 AA.  
XX  
AC AAY42861;  
XX  
DT 19-JAN-2000 (first entry)  
XX  
DE Chimeric protein, SEQ ID 7.  
XX  
KW Insulin; precursor; growth hormone; chaperone; intramolecular; folding;  
KW conformation; chimeric protein; cleavable; recombinant; production;  
KW yield.  
XX  
OS Synthetic.  
OS Homo sapiens.  
XX

PN WO9950302-A1.  
XX  
PD 07-OCT-1999.  
XX  
PF 31-MAR-1998; 98WO-CN000052.  
XX  
PR 31-MAR-1998; 98WO-CN000052.  
XX  
PA (TONG-) TONGHUA GANTECH BIOTECHNOLOGY LTD.  
XX  
PI Gan Z;  
XX  
DR WPI; 1999-610839/52.  
XX  
PT New chimeric proteins containing human growth hormone fragment, used  
PT particularly for the production of human insulin.  
XX  
PS Claim 14; Page 30-31; 46pp; English.

XX  
CC This sequence represents a chimeric protein, which contains an N-terminal  
CC fragment of human growth hormone (hGH) of the sequence given in AAY42856,  
CC a cleavable peptide linker (AAV42857), and a human insulin precursor  
CC comprising insulin A and B chains (AAV42859). The hGH portion of the  
CC chimeric protein acts as an intramolecular chaperone (IMC) for the  
CC insulin precursor, enabling it to fold correctly. The cleavable peptide  
CC linker has a C-terminal Arg residue which enables the hGH portion of the  
CC chimeric protein to be removed after folding has taken place. Production  
CC of recombinant human insulin via an hGH-proinsulin chimeric protein can  
CC provide human insulin with correctly linked cysteine bridges with fewer  
CC necessary procedural steps, and hence resulting in a higher yield of  
CC human insulin. The IMC sequences not only protect insulin sequences from  
CC intracellular degradation by a microorganism host, but also promote the  
CC folding of the fused insulin precursor, facilitate the solubility of the  
CC fusion protein and decrease the intermolecular interactions among the  
CC fusion proteins, thus allowing folding of the fused insulin precursor at  
CC commercially useful high concentrations. The procedural steps of cyanogen  
CC bromide cleavage, oxidative sulphitolsis and related purification steps  
CC can thus be eliminated, along with the use of high concentrations of  
CC mercaptan or the use of hydrophobic absorbent resins

XX  
SQ Sequence 150 AA;

Query Match 100.0%; Score 260; DB 2; Length 150;  
Best Local Similarity 100.0%; Pred. No. 1.1e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 7  
AAP90129  
ID AAP90129 standard; protein; 192 AA.  
XX  
AC AAP90129;  
XX

DT 24-OCT-2003 (revised)  
DT 25-MAR-2003 (revised)  
DT 06-FEB-1996 (revised)  
DT 01-NOV-1989 (first entry)  
XX  
DE Human growth hormone.  
XX  
KW Human growth hormone; fusion protein; recombinant vector.  
XX  
OS Homo sapiens; (Human).  
XX  
PN JP01144981-A.  
XX  
PD 07-JUN-1989.  
XX  
PF 02-DEC-1987; 87JP-00304937.  
XX  
PR 02-DEC-1987; 87JP-00304937.  
XX  
PA (WAKT ) WAKUNAGA SEIYAKU KK.  
XX  
DR WPI; 1989-209284/29.  
DR N-PSDB; AAN90269.  
XX  
PT Recombinant vector contg. fused protein aminoacid coding - composed of  
PT growth hormone or its polypeptide deriv. and foreign protein.  
XX  
PS Disclosure; Fig 1; 19pp; Japanese.  
XX  
CC The invention consists of a vector contg. a fusion protein which is  
CC formed by ligating, downstream of a promoter, hGH or a deriv. (pref.  
CC formed by substn. of Met-14 with Leu) and a foreign protein. Stability  
CC of the vector in the host is greatly increased so the protein yield is  
CC higher. (Updated on 25-MAR-2003 to correct PA field.) (Updated on 24-OCT-  
CC 2003 to standardise OS field)  
XX  
SQ Sequence 192 AA;

Query Match 100.0%; Score 260; DB 1; Length 192;  
Best Local Similarity 100.0%; Pred. No. 1.5e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 8  
AAW92264  
ID AAW92264 standard; protein; 192 AA.  
XX  
AC AAW92264;  
XX  
DT 08-JUN-1999 (first entry)  
XX  
DE Human anti-angiogenic peptide hGH Met-1Phe191.  
XX

KW Human; anti-angiogenic; prolactin; placental lactogen; hPL; angiogenesis; growth hormone; hGH; hGH-V; capillary endothelial cell proliferation; placental vascularisation; pregnancy; treatment; angiogenic disease; tumour; inhibitor; malignant; angiofibroma; arteriovenous malformation; arthritis; atherosclerotic plaques; corneal graft neovascularisation; wound healing; proliferative retinopathy; macular degeneration; trachoma; granulation; glaucoma; ocular; uveitis; fracture; Osler-Weber syndrome; psoriasis; fibroplasia; scleroderma; Kaposi's sarcoma; vascular adhesion; ulcer; leukaemia; reproductive disorder; contraceptive agent; gene therapy; pre-eclampsia; intrauterine growth retardation; placental dysfunction.

XX

OS Homo sapiens.

XX

PN WO9851323-A1.

XX

PD 19-NOV-1998.

XX

PF 12-MAY-1998; 98WO-US009691.

XX

PR 13-MAY-1997; 97US-0046394P.

XX

PA (REGC ) UNIV CALIFORNIA.

XX

PI Weiner RI, Martial JA, Struman I, Taylor R;

XX

DR WPI; 1999-045192/04.

DR N-PSDB; AAX01706.

XX

PT New anti-angiogenic peptides - comprise N-terminal fragments of human placental lactogen, human growth hormone, growth hormone variant or human prolactin.

XX

PS Example 3; Page 49; 87pp; English.

XX

CC This invention describes novel human anti-angiogenic peptides derived from 10 to 150 consecutive amino acids selected from the N-terminal end of human placental lactogen (hPL), human growth hormone (hGH), growth hormone variant (hGH-V), or human prolactin. Such peptides (i) inhibit capillary endothelial cell proliferation and organisation (ii) inhibit angiogenesis in chick chorioallantoic membrane and (iii) binds to at least one specific receptor which does not bind an intact full length hGH, hPL, prolactin or hGH-V. The invention also describes a method for diagnosing a probable abnormality of placental vascularisation during pregnancy. The peptides can be used for treating an angiogenic disease in a subject, for inhibiting tumour formation or growth in a patient or for modulating vascularisation of a patient's placenta. In particular, the peptides can be used for preventing or treating e.g. malignant tumours, angiofibroma, arteriovenous malformation, arthritic such as rheumatoid arthritis, atherosclerotic plaques, corneal graft neovascularisation, delayed wound healing, proliferative retinopathy such as diabetic retinopathy, macular degeneration, granulations such as those occurring in haemophilic joints, inappropriate vascularisation in wound healing such as hypertrophic scars or keloid scars, neovascular glaucoma, ocular tumour, uveitis, non-union fractures, Osler-Weber syndrome, psoriasis, pyogenic glaucoma, retroental fibroplasia, scleroderma, solid tumours, Kaposi's sarcoma, trachoma, vascular adhesions, chronic varicose ulcers,

CC leukaemia, and reproductive disorders such as follicular and luteal cysts  
CC and choriocarcinoma. They can also be used as contraceptive agents. DNA  
CC encoding the peptides can be used in gene therapy. The measurement of  
CC abnormal levels of N-terminal fragments of hGH, hGH-V, prolactin or hPL  
CC can be used in assays for impairment of vascular development associated  
CC with pre-eclampsia, intrauterine growth retardation, and placental  
CC dysfunction

XX

SQ Sequence 192 AA;

Query Match 100.0%; Score 260; DB 2; Length 192;  
Best Local Similarity 100.0%; Pred. No. 1.5e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 9

AAP91299

ID AAP91299 standard; protein; 261 AA.

XX

AC AAP91299;

XX

DT 24-OCT-2003 (revised)

DT 14-DEC-1989 (first entry)

XX

DE Human nerve growth factor and human growth hormone fusion protein.

XX

KW Human nerve growth factor; fusion protein; thrombin; geriatric dementia;  
KW nervous disorders; human growth hormone.

XX

OS Homo sapiens; (human).

XX

FH Key Location/Qualifiers

FT Region 1. .140

FT Region 141. .143

FT Region 144. .261

XX

PN EP329175-A.

XX

PD 23-AUG-1989.

XX

PF 17-FEB-1989; 89EP-00102795.

XX

PR 19-FEB-1988; 88JP-00035042.

XX

PA (TOYJ ) TOSOH CORP.

XX

PI Ohtsuka E;

XX

DR WPI; 1989-243092/34.

XX

PT New human nerve growth factor gene encoding fusion protein - having  
PT cleavage site for thrombin, useful for treating geriatric dementia, etc.

XX

PS Claim 36; Page 31-32; 38pp; English.

XX

CC Fusion protein consisting of human growth hormone at the N-terminal end  
CC (1st region), a 3 amino acid sequence representing thrombin recognition  
CC site, and human beta nerve growth factor (beta-NGF) at the C-terminal.  
CC Beta-NGF can be used to control geriatric dementia and other nervous  
CC disorders, and can be released from the fusion protein by incubation with  
CC thrombin (see AAN90577-8, AAP91034, AAP91041). (Updated on 24-OCT-2003 to  
CC standardise OS field)

XX

SQ Sequence 261 AA;

Query Match 100.0%; Score 260; DB 1; Length 261;  
Best Local Similarity 100.0%; Pred. No. 2e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

||||||||||||||||||||||||||||||||||||||||||||||||||||||

Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 10

AAP61033

ID AAP61033 standard; protein; 262 AA.

XX

AC AAP61033;

XX

DT 25-OCT-1991 (first entry)

XX

DE Human beta-nerve growth factor gene product.

XX

KW Beta-NGF; E.coli; ds.

XX

OS Homo sapiens.

XX

FH Key Location/Qualifiers

FT Protein 145. .262

XX

PN JP61205485-A.

XX

PD 11-SEP-1986.

XX

PF 09-MAR-1985; 85JP-00045773.

XX

PR 09-MAR-1985; 85JP-00045773.

XX

PA (OTSU/) OTSUKA E.

XX

DR WPI; 1986-281696/43.

XX

PT Gene segment of human nerve growth factor - used in prodn. of NGF-  
PT producing recombinant Escherichia strain.

XX

PS Claim 32; Page 482; 71pp; Japanese.

XX

CC The protein is a direct translation of the upstream tryptophan promoter-  
CC operator lacking its attenuation sequence and human beta-NGF sequence.

CC The product may be efficiently expressed from a transformed E.coli  
CC expression system. See also AAN60816-7

XX

SQ Sequence 262 AA;

Query Match 100.0%; Score 260; DB 1; Length 262;  
Best Local Similarity 100.0%; Pred. No. 2.1e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIADFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQIADFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 11

AAR11740

ID AAR11740 standard; protein; 262 AA.

XX

AC AAR11740;

XX

DT 25-MAR-2003 (revised)

DT 25-JUN-1991 (first entry)

XX

DE Human growth hormone/human nerve growth factor beta fusion protein.

XX

KW hGH; hNGF; nervous system diseases; dementia.

XX

OS Homo sapiens.

XX

PN JP03067598-A.

XX

PD 22-MAR-1991.

XX

PF 07-AUG-1989; 89JP-00202835.

XX

PR 07-AUG-1989; 89JP-00202835.

XX

PA (TOYJ ) TOSOH CORP.

XX

DR WPI; 1991-128768/18.

DR N-PSDB; AAQ11578.

XX

PT Purificn. of human neuron growth factor beta-sub:unit-contg. protein - by  
PT contacting with gel having cation exchange gp. in presence of urea.

XX

PS Disclosure; Fig 1; 7pp; Japanese.

XX

CC A recombinant human nerve growth factor beta subunit-contg. protein can  
CC be produced as this fusion protein. It is purified by contacting a gel  
CC having a cation exchange gp. with the fusion protein, in the presence of  
CC urea. The purified protein is useful in a medicament for treating  
CC disorders of the nervous system, eg dementia. (Updated on 25-MAR-2003 to  
CC correct PF field.)

XX

SQ Sequence 262 AA;

Query Match 100.0%; Score 260; DB 2; Length 262;

Best Local Similarity 100.0%; Pred. No. 2.1e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 12

AAR03255

ID AAR03255 standard; protein; 310 AA.

XX

AC AAR03255;

XX

DT 19-JUL-1990 (first entry)

XX

DE Fusion protein of B-cell stimulatory factor-2 and B-cell differentiation  
DE factor.

XX

KW B-cell stimulatory factor-2; interleukin-6; B-cell differentiation;  
KW interleukin-5; fusion protein.

XX

OS Homo sapiens.

XX

PN JP02013375-A.

XX

PD 17-JAN-1990.

XX

PF 01-JUL-1988; 88JP-00162556.

XX

PR 01-JUL-1988; 88JP-00162556.

XX

PA (TOYJ ) TOSOH CORP.

XX

DR WPI; 1990-062207/09.

DR N-PSDB; AAQ02028.

XX

PT Prepn. of human B cell differentiation factor - from specified DNA  
PT sequence segment, by recombinant DNA technique, gives protein of  
PT specified amino acid sequence.

XX

PS Claim 31; Page 9; 17pp; Japanese.

XX

CC The protein is produced by fusing DNA encoding BDF (IL-) with DNA  
CC encoding BSF-2 (IL-5) and ligating the product into an expression vector  
CC See also AAR05311 and AAR05313

XX

SQ Sequence 310 AA;

Query Match 100.0%; Score 260; DB 2; Length 310;  
Best Local Similarity 100.0%; Pred. No. 2.5e-24;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 13  
AAR05313  
ID AAR05313 standard; protein; 144 AA.  
XX  
AC AAR05313;  
XX  
DT 19-JUL-1990 (first entry)  
XX  
DE Segment of B-cell stimulatory factor-2 (IL-5).  
XX  
KW B-cell stimulatory factor-2; interleukin-5.  
XX  
OS Homo sapiens.  
XX  
PN JP02013375-A.  
XX  
PD 17-JAN-1990.  
XX  
PF 01-JUL-1988; 88JP-00162556.  
XX  
PR 01-JUL-1988; 88JP-00162556.  
XX  
PA (TOYJ ) TOSOH CORP.  
XX  
DR WPI; 1990-062207/09.  
DR N-PSDB; AAQ02028.  
XX  
PT Prepn. of human B cell differentiation factor - from specified DNA  
PT sequence segment, by recombinant DNA technique, gives protein of  
PT specified amino acid sequence.  
XX  
PS Disclosure; Page 9; 17pp; Japanese.  
XX  
CC The sequence encoding this protein can be fused with DNA encoding B-cell  
CC differentiation factor (IL-6) and ligated into an expression vector for  
CC prodn. of a fusion protein. See also AAR05311  
XX  
SQ Sequence 144 AA;

Query Match 98.8%; Score 257; DB 2; Length 144;  
Best Local Similarity 98.0%; Pred. No. 2.5e-24;  
Matches 48; Conservative 1; Mismatches 0; Indels 0; Gaps 0;  
QY 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLENP 49

RESULT 14  
ABB77327  
ID ABB77327 standard; protein; 204 AA.  
XX  
AC ABB77327;  
XX  
DT 17-JUN-2002 (first entry)  
XX

DE Human growth hormone with collagenase recognition site.  
XX  
KW Human; growth hormone; collagenase; recognition site.  
XX  
OS Homo sapiens.  
XX  
PN KR289691-B.  
XX  
PD 15-MAY-2001.  
XX  
PF 28-DEC-1993; 93KR-00030318.  
XX  
PR 28-DEC-1993; 93KR-00030318.  
XX  
PA (GLDS ) LG CHEM LTD.  
XX  
PI Yoo JG, Song YH;  
XX  
DR WPI; 2002-185396/24.  
DR N-PSDB; ABL55999.  
XX  
PT Recombinant human growth hormone having collagenase recognition region.  
XX  
PS Disclosure; Fig 3; 8pp; Korean.  
XX  
CC The invention relates to recombinant human growth hormone having a  
CC collagenase recognition region  
XX  
SQ Sequence 204 AA;

Query Match 98.5%; Score 256; DB 5; Length 204;  
Best Local Similarity 98.0%; Pred. No. 4.9e-24;  
Matches 48; Conservative 1; Mismatches 0; Indels 0; Gaps 0;  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQ~~LAFDTYQE~~EEAYIPKEQKY~~S~~FLQNP 49  
:|||||||||||||||||||||||||||||||||||||  
Db 13 VFPTIPLSRLFDNAMLRAHRLHQ~~LAFDTYQE~~EEAYIPKEQKY~~S~~FLQNP 61

RESULT 15  
AAP81226  
ID AAP81226 standard; protein; 138 AA.  
XX  
AC AAP81226;  
XX  
DT 25-MAR-2003 (revised)  
DT 20-NOV-1990 (first entry)  
XX  
DE Sequence of protein with somatomedin-like activity.  
XX  
KW Growth hormone.  
XX  
OS Synthetic.  
XX  
PN JP63167798-A.  
XX  
PD 11-JUL-1988.

XX  
PF 29-DEC-1986; 86JP-00310177.  
XX  
PR 29-DEC-1986; 86JP-00310177.  
XX  
PA (TOYJ ) TOYO SODA MFG CO LTD.  
XX  
DR WPI; 1988-232632/33.  
DR N-PSDB; AAN81605.  
XX  
PT Polypeptide with somatomedin-like activity - by culturing bacterium  
PT transformed by plasmid contg. gene segment with specified DNA sequence.  
XX  
PS Claim 2(1); Page 609; 9pp; Japanese.  
XX  
CC The polypeptide (AAP81226) with somatomedin-like activity and the DNA  
CC (AAN81605) encoding it are claimed. A Met resicual gp. may be added to  
CC the N-terminal. The polypeptide acts on the bone structure of mammals,  
CC including humans, to promote bone growth. The polypeptide has high  
CC production rate and is easily extracted from bacterial culture medium and  
CC refined for use as a bone growth accelerator. (Updated on 25-MAR-2003 to  
CC correct PA field.)  
XX  
SQ Sequence 138 AA;

Query Match 98.1%; Score 255; DB 1; Length 138;  
Best Local Similarity 100.0%; Pred. No. 4.3e-24;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 48

Search completed: July 15, 2004, 16:35:31  
Job time : 27.597 secs

GenCore version 5.1.6  
Copyright (c) 1993 - 2004 Compugen Ltd.

OM protein - protein search, using sw model

Run on: July 15, 2004, 16:30:45 ; Search time 7.40485 Seconds  
(without alignments)  
341.624 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 389414 seqs, 51625971 residues

Total number of hits satisfying chosen parameters: 389414

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Issued\_Patents\_AA:\*

1: /cgn2\_6/ptodata/2/iaa/5A\_COMB.pep:\*

2: /cgn2\_6/ptodata/2/iaa/5B\_COMB.pep:\*

3: /cgn2\_6/ptodata/2/iaa/6A\_COMB.pep:\*

4: /cgn2\_6/ptodata/2/iaa/6B\_COMB.pep:\*

5: /cgn2\_6/ptodata/2/iaa/PCTUS\_COMB.pep:\*

6: /cgn2\_6/ptodata/2/iaa/backfiles1.pep:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query				Description
		Match	Length	DB	ID	
1	260	100.0	192	1	US-08-093-383-1	Sequence 1, Appli
2	255	98.1	191	4	US-09-284-878-5	Sequence 5, Appli
3	255	98.1	191	4	US-09-462-941-1	Sequence 1, Appli
4	255	98.1	191	4	US-09-554-451-1	Sequence 1, Appli
5	255	98.1	194	2	US-08-383-621-4	Sequence 4, Appli
6	255	98.1	194	3	US-08-459-906-4	Sequence 4, Appli
7	255	98.1	217	3	US-08-589-028-10	Sequence 10, Appli
8	255	98.1	217	3	US-08-784-582-10	Sequence 10, Appli
9	255	98.1	217	3	US-08-785-271-10	Sequence 10, Appli
10	255	98.1	217	3	US-08-759-628-11	Sequence 11, Appli
11	255	98.1	217	4	US-09-284-878-1	Sequence 1, Appli

12	255	98.1	217	4	US-09-511-024A-1	Sequence 1, Appli
13	255	98.1	241	4	US-09-424-620B-25	Sequence 25, Appl
14	255	98.1	245	4	US-09-280-030-66	Sequence 66, Appl
15	255	98.1	274	3	US-08-784-582-71	Sequence 71, Appl
16	255	98.1	360	3	US-08-784-582-73	Sequence 73, Appl
17	250	96.2	191	4	US-09-554-451-3	Sequence 3, Appli
18	249	95.8	191	4	US-09-465-461-1	Sequence 1, Appli
19	249	95.8	217	1	US-08-187-756C-4	Sequence 4, Appli
20	249	95.8	217	1	US-08-469-486-51	Sequence 51, Appli
21	249	95.8	217	2	US-08-469-658-51	Sequence 51, Appli
22	249	95.8	217	2	US-08-710-324A-4	Sequence 4, Appli
23	249	95.8	217	4	US-09-411-657-4	Sequence 4, Appli
24	248	95.4	191	3	US-08-800-215C-16	Sequence 16, Appli
25	248	95.4	191	3	US-08-800-215C-18	Sequence 18, Appli
26	248	95.4	191	3	US-08-800-215C-20	Sequence 20, Appli
27	248	95.4	400	4	US-09-420-819-37	Sequence 37, Appli
28	248	95.4	401	4	US-09-420-819-36	Sequence 36, Appli
29	246	94.6	191	4	US-09-511-024A-4	Sequence 4, Appli
30	246	94.6	191	4	US-09-511-024A-5	Sequence 5, Appli
31	243	93.5	191	4	US-09-511-024A-9	Sequence 9, Appli
32	242	93.1	191	4	US-09-511-024A-3	Sequence 3, Appli
33	242	93.1	191	4	US-09-511-024A-6	Sequence 6, Appli
34	237	91.2	71	1	US-08-314-586-24	Sequence 24, Appli
35	233	89.6	70	1	US-07-920-519-24	Sequence 24, Appli
36	233	89.6	70	3	US-08-115-753-26	Sequence 26, Appli
37	226	86.9	191	4	US-09-511-024A-7	Sequence 7, Appli
38	222	85.4	190	4	US-09-511-024A-13	Sequence 13, Appli
39	218	83.8	191	4	US-09-511-024A-8	Sequence 8, Appli
40	215	82.7	190	4	US-09-511-024A-10	Sequence 10, Appli
41	215	82.7	190	4	US-09-511-024A-12	Sequence 12, Appli
42	212	81.5	190	4	US-09-511-024A-11	Sequence 11, Appli
43	164.5	63.3	191	1	US-08-468-824-8	Sequence 8, Appli
44	164	63.1	176	3	US-08-791-728-1	Sequence 1, Appli
45	164	63.1	176	4	US-08-990-774-1	Sequence 1, Appli

## ALIGNMENTS

RESULT 1  
 US-08-093-383-1  
; Sequence 1, Application US/08093383  
; Patent No. 5489529  
; GENERAL INFORMATION:  
; APPLICANT: DeBoer, Herman A.  
; APPLICANT: Heyneker, Herbert L.  
; APPLICANT: Seeburg, Peter H.  
; TITLE OF INVENTION: DNA for Expression of Bovine Growth Hormone  
; NUMBER OF SEQUENCES: 30  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Genentech, Inc.  
; STREET: 460 Point San Bruno Blvd  
; CITY: South San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94080  
; COMPUTER READABLE FORM:

; MEDIUM TYPE: 5.25 inch, 360 Kb floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: patin (Genentech)  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/08/093,383  
FILING DATE: 14-JUL-1993  
CLASSIFICATION: 435  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 07/619827  
FILING DATE: 28-NOV-1990  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 07/198824  
FILING DATE: 05-APR-1988  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 06/632361  
FILING DATE: 19-JUL-1984  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: 06/303687  
FILING DATE: 18-SEP-1981  
ATTORNEY/AGENT INFORMATION:  
NAME: Johnston, Sean A.  
REGISTRATION NUMBER: P35,910  
REFERENCE/DOCKET NUMBER: 46C4  
TELECOMMUNICATION INFORMATION:  
TELEPHONE: 415/225-3562  
TELEFAX: 415/952-9881  
TELEX: 910/371-7168  
INFORMATION FOR SEQ ID NO: 1:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 192 amino acids  
TYPE: amino acid  
TOPOLOGY: linear

US-08-093-383-1

Query Match 100.0%; Score 260; DB 1; Length 192;  
Best Local Similarity 100.0%; Pred. No. 5.6e-30;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 2

US-09-284-878-5

; Sequence 5, Application US/09284878  
; Patent No. 6342375  
; GENERAL INFORMATION:  
; APPLICANT: Olazaran, Martha Guerrero  
; APPLICANT: Saldana, Hugo Barrera  
; APPLICANT: Salvado, Jose Maria Viader  
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast  
for the  
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone  
; FILE REFERENCE: 1829.0010000  
; CURRENT APPLICATION NUMBER: US/09/284,878

; CURRENT FILING DATE: 1999-07-21  
; PRIOR APPLICATION NUMBER: PCT/MX97/00033  
; PRIOR FILING DATE: 1997-10-24  
; NUMBER OF SEQ ID NOS: 9  
; SOFTWARE: PatentIn Ver. 2.1  
; SEQ ID NO 5  
; LENGTH: 191  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-284-878-5

RESULT 3  
US-09-462-941-1  
; Sequence 1, Application US/09462941  
; Patent No. 6608183  
; GENERAL INFORMATION:  
; APPLICANT: Cox III, George N  
; APPLICANT: Bolder Biotechnology, Inc.  
; TITLE OF INVENTION: Derivatives of Growth Hormone and Related Proteins  
; FILE REFERENCE: 4152-1-PUS  
; CURRENT APPLICATION NUMBER: US/09/462,941  
; CURRENT FILING DATE: 2000-01-14  
; PRIOR APPLICATION NUMBER: 60/052,516  
; PRIOR FILING DATE: 1997-07-14  
; NUMBER OF SEQ ID NOS: 41  
; SOFTWARE: PatentIn Ver. 2.0  
; SEQ ID NO 1  
; LENGTH: 191  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-462-941-1

RESULT 4  
US-09-554-451-1  
; Sequence 1, Application US/09554451  
; Patent No. 6680207  
; GENERAL INFORMATION:  
; APPLICANT: Jonathan Paul MURPHY  
; Anthony ATKINSON

; TITLE OF INVENTION: Detection of Molecules in Samples  
; NUMBER OF SEQUENCES: 9  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Pillsbury Winthrop, L.L.P.  
; STREET: 1100 New York Ave., N.W.  
; CITY: Washington  
; STATE: D.C.  
; COUNTRY: U.S.A.  
; ZIP: 20005  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Diskette  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: MS Word  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/09/554,451  
; FILING DATE: 15-May-2000  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: PCT/GB98/03449  
; FILING DATE: No. 6680207ember 16, 1998  
; APPLICATION NUMBER: GB 9723955.2  
; FILING DATE: No. 6680207ember 14, 1997  
; INFORMATION FOR SEQ ID NO: 1:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 191 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; SEQUENCE DESCRIPTION: SEQ ID NO: 1:  
US-09-554-451-1

Query Match 98.1%; Score 255; DB 4; Length 191;  
Best Local Similarity 100.0%; Pred. No. 3e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQ~~LA~~FDTYQE~~EE~~AYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 FPTIPLSRLFDNAMLRAHRLHQ~~LA~~FDTYQE~~EE~~AYIPKEQKYSFLQNP 48

RESULT 5  
US-08-383-621-4  
; Sequence 4, Application US/08383621  
; Patent No. 5951972  
; GENERAL INFORMATION:  
; APPLICANT: Daley, Michael J.  
; APPLICANT: Buckwalter, Brian L.  
; APPLICANT: Cady, Susan M.  
; APPLICANT: Shieh, Hong-Ming  
; APPLICANT: Bohlen, Peter  
; APPLICANT: Seddon, Andrew P.  
; TITLE OF INVENTION: Stabilization Of Somatotropins And Other  
; TITLE OF INVENTION: Proteins By Modification Of Cysteine Residues  
; NUMBER OF SEQUENCES: 11  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Dr. Estelle J. Tsevdos

; STREET: 1937 West Main Street, P.O. Box 60  
; CITY: Stamford  
; STATE: Connecticut  
; COUNTRY: U.S.A.  
; ZIP: 06904-0060  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/383,621  
; FILING DATE: 06-FEB-1995  
; CLASSIFICATION: 514  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 07/766,142  
; FILING DATE: 25-SEP-1991  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Tsevdos, Estelle J.  
; REGISTRATION NUMBER: 31,145  
; REFERENCE/DOCKET NUMBER: 31,278-01  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 203-321-2756  
; TELEFAX: 203-321-2971  
; TELEX: 203-710-474-4059  
; INFORMATION FOR SEQ ID NO: 4:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 194 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-383-621-4

Query Match 98.1%; Score 255; DB 2; Length 194;  
Best Local Similarity 100.0%; Pred. No. 3e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
Db 4 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 51

RESULT 6  
US-08-459-906-4  
; Sequence 4, Application US/08459906  
; Patent No. 6010999  
; GENERAL INFORMATION:  
; APPLICANT: Daley, Michael J.  
; APPLICANT: Buckwalter, Brian L.  
; APPLICANT: Cady, Susan M.  
; APPLICANT: Shieh, Hong-Ming  
; APPLICANT: Bohlen, Peter  
; APPLICANT: Seddon, Andrew P.  
; TITLE OF INVENTION: Stabilization of Somatotropins and Other  
; TITLE OF INVENTION: Proteins by Modification of Cysteine Residues  
; NUMBER OF SEQUENCES: 11  
; CORRESPONDENCE ADDRESS:

; ADDRESSEE: American Cyanamid Company  
; STREET: One Cyanamid Plaza  
; CITY: Wayne  
; STATE: New Jersey  
; COUNTRY: U.S.A.  
; ZIP: 07470-8426  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.25  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/459,906  
; FILING DATE: 02-JUN-1995  
; CLASSIFICATION: 514  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Webster, Darryl L.  
; REGISTRATION NUMBER: 34,276  
; REFERENCE/DOCKET NUMBER: 31,278-03  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 201-831-3247  
; TELEFAX: 201-831-3305  
; INFORMATION FOR SEQ ID NO: 4:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 194 amino acids  
; TYPE: amino acid  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
US-08-459-906-4

Query Match 98.1%; Score 255; DB 3; Length 194;  
Best Local Similarity 100.0%; Pred. No. 3e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 4 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 51

RESULT 7  
US-08-589-028-10  
; Sequence 10, Application US/08589028  
; Patent No. 6087129  
; GENERAL INFORMATION:  
; APPLICANT: Newgard, Christopher B.  
; APPLICANT: Halban, Philippe  
; APPLICANT: No. 6087129mington, Karl D.  
; APPLICANT: Clark, Samuel A.  
; APPLICANT: Thigpen, Anice E.  
; APPLICANT: Quaade, Christian  
; APPLICANT: Kruse, Fred  
; TITLE OF INVENTION: Recombinant Expression of Proteins From  
; TITLE OF INVENTION: Secretory Cell Lines  
; NUMBER OF SEQUENCES: 50  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Arnold, White & Durkee  
; STREET: P. O. Box 4433

; CITY: Houston  
; STATE: TX  
; COUNTRY: USA  
; ZIP: 77210-4433  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/589,028  
; FILING DATE: Concurrently Herewith  
; CLASSIFICATION: 435  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Highlander, Steven L.  
; REGISTRATION NUMBER: 47,642  
; REFERENCE/DOCKET NUMBER: UTSD:426\HYL  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: (512) 418-3000  
; TELEFAX: (512) 474-7577  
; INFORMATION FOR SEQ ID NO: 10:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 217 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
US-08-589-028-10

Query Match 98.1%; Score 255; DB 3; Length 217;  
Best Local Similarity 100.0%; Pred. No. 3.5e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKEQKYSFLQNP 49  
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Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFTYQEFEEAYIPKEQKYSFLQNP 74

RESULT 8  
US-08-784-582-10  
; Sequence 10, Application US/08784582  
; Patent No. 6110707  
; GENERAL INFORMATION:  
; APPLICANT: Newgard, Christopher B.  
; APPLICANT: Halban, Philippe A.  
; APPLICANT: No. 6110707mington, Karl D.  
; APPLICANT: Clark, Samuel A.  
; APPLICANT: Thigpen, Anice E.  
; APPLICANT: Quaade, Christian  
; APPLICANT: Kruse, Fred  
; APPLICANT: McGarry, Dennis  
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM  
; TITLE OF INVENTION: SECRETORY CELL LINES  
; NUMBER OF SEQUENCES: 79  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Arnold, White & Durkee  
; STREET: P.O. Box 4433  
; CITY: Houston

;  
; STATE: Texas  
; COUNTRY: USA  
; ZIP: 77210  
;  
; COMPUTER READABLE FORM:  
;  
; MEDIUM TYPE: Floppy disk  
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; COMPUTER: IBM PC compatible  
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; OPERATING SYSTEM: PC-DOS/MS-DOS  
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; SOFTWARE: PatentIn Release #1.0, Version #1.30  
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; CURRENT APPLICATION DATA:  
;  
; APPLICATION NUMBER: US/08/784,582  
;  
; FILING DATE: Concurrently Herewith  
;  
; CLASSIFICATION: 435  
;  
; PRIOR APPLICATION DATA:  
;  
; APPLICATION NUMBER: US 60/028,427  
;  
; FILING DATE: 15-OCT-1996  
;  
; PRIOR APPLICATION DATA:  
;  
; APPLICATION NUMBER: US 08/589,028  
;  
; FILING DATE: 19-JAN-1996  
;  
; ATTORNEY/AGENT INFORMATION:  
;  
; NAME: Highlander, Steven L.  
;  
; REGISTRATION NUMBER: 37,642  
;  
; REFERENCE/DOCKET NUMBER: UTSD:514  
;  
; TELECOMMUNICATION INFORMATION:  
;  
; TELEPHONE: 512/418-3000  
;  
; TELEFAX: 512/474-7577  
;  
; INFORMATION FOR SEQ ID NO: 10:  
;  
; SEQUENCE CHARACTERISTICS:  
;  
; LENGTH: 217 amino acids  
;  
; TYPE: amino acid  
;  
; STRANDEDNESS:  
;  
; TOPOLOGY: linear  
US-08-784-582-10

Query Match 98.1%; Score 255; DB 3; Length 217;  
Best Local Similarity 100.0%; Pred. No. 3.5e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 9  
US-08-785-271-10  
;  
; Sequence 10, Application US/08785271  
;  
; Patent No. 6194176  
;  
; GENERAL INFORMATION:  
;  
; APPLICANT: Newgard, Christopher B.  
;  
; APPLICANT: Halban, Philippe A.  
;  
; APPLICANT: No. 6194176mington, Karl D.  
;  
; APPLICANT: Clark, Samuel A.  
;  
; APPLICANT: Thigpen, Anice E.  
;  
; APPLICANT: Quaade, Christian  
;  
; APPLICANT: Kruse, Fred  
;  
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM  
;  
; TITLE OF INVENTION: SECRETORY CELL LINES  
;  
; NUMBER OF SEQUENCES: 56

; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Arnold, White & Durkee  
; STREET: P.O. Box 4433  
; CITY: Houston  
; STATE: Texas  
; COUNTRY: USA  
; ZIP: 77210  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/785,271  
; FILING DATE: Concurrently Herewith  
; CLASSIFICATION: 435  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 08/589,028  
; FILING DATE: 19-JAN-1996  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Highlander, Steven L.  
; REGISTRATION NUMBER: 37,642  
; REFERENCE/DOCKET NUMBER: UTSD:513  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 512/418-3000  
; TELEFAX: 512/474-7577  
; INFORMATION FOR SEQ ID NO: 10:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 217 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
US-08-785-271-10

Query Match 98.1%; Score 255; DB 3; Length 217;  
Best Local Similarity 100.0%; Pred. No. 3.5e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 10  
US-08-759-628-11  
; Sequence 11, Application US/08759628  
; Patent No. 6225446  
; GENERAL INFORMATION:  
; APPLICANT: Altmann, Scott W.  
; APPLICANT: Rock, Fernando L.  
; APPLICANT: Bazan, J. Fernando  
; APPLICANT: Kastelein, Robert A.  
; TITLE OF INVENTION: MUTATIONAL VARIANTS OF MAMMALIAN PROTEINS  
; NUMBER OF SEQUENCES: 11  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: DNAX Research Institute  
; STREET: 901 California Avenue

; CITY: Palo Alto  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94304-1104  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/759,628  
; FILING DATE: 05-DEC-1996  
; CLASSIFICATION: 435  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 60/008,574  
; FILING DATE: 06-DEC-1995  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Ching, Edwin P.  
; REGISTRATION NUMBER: 34,090  
; REFERENCE/DOCKET NUMBER: DX0552Q  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 415-852-9196  
; TELEFAX: 415-496-1200  
; INFORMATION FOR SEQ ID NO: 11:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 217 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: single  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; FEATURE:  
; NAME/KEY: Peptide  
; LOCATION: 32..53  
; FEATURE:  
; NAME/KEY: Peptide  
; LOCATION: 94..115  
; FEATURE:  
; NAME/KEY: Peptide  
; LOCATION: 133..153  
; FEATURE:  
; NAME/KEY: Peptide  
; LOCATION: 192..210  
; OTHER INFORMATION: /note= "The peptides above are  
; OTHER INFORMATION: depicted in Figure 1"  
US-08-759-628-11

Query Match 98.1%; Score 255; DB 3; Length 217;  
Best Local Similarity 100.0%; Pred. No. 3.5e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
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Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 74

RESULT 11  
US-09-284-878-1

; Sequence 1, Application US/09284878  
; Patent No. 6342375  
; GENERAL INFORMATION:  
; APPLICANT: Olazaran, Martha Guerrero  
; APPLICANT: Saldana, Hugo Barrera  
; APPLICANT: Salvado, Jose Maria Viader  
; TITLE OF INVENTION: Genetically Modified Methylotrophic P. pastoris Yeast  
for the  
; TITLE OF INVENTION: Production and Secretion of the Human Growth Hormone  
; FILE REFERENCE: 1829.0010000  
; CURRENT APPLICATION NUMBER: US/09/284,878  
; CURRENT FILING DATE: 1999-07-21  
; PRIOR APPLICATION NUMBER: PCT/MX97/00033  
; PRIOR FILING DATE: 1997-10-24  
; NUMBER OF SEQ ID NOS: 9  
; SOFTWARE: PatentIn Ver. 2.1  
; SEQ ID NO 1  
; LENGTH: 217  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-284-878-1

RESULT 12  
US-09-511-024A-1  
; Sequence 1, Application US/09511024A  
; Patent No. 6634554  
; GENERAL INFORMATION:  
; APPLICANT: Filikov, Anton  
; APPLICANT: Dahiyat, Bassil I.  
; TITLE OF INVENTION: NOVEL NUCLEIC ACIDS AND PROTEINS WITH GROWTH HORMONE  
ACTIVITY  
; FILE REFERENCE: A-67477-1/RFT/RMS/RMK  
; CURRENT APPLICATION NUMBER: US/09/511,024A  
; CURRENT FILING DATE: 2002-05-06  
; PRIOR APPLICATION NUMBER: US 60/133,784  
; PRIOR FILING DATE: 1999-05-12  
; NUMBER OF SEQ ID NOS: 13  
; SOFTWARE: PatentIn version 3.1  
; SEQ ID NO 1  
; LENGTH: 217  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
; FEATURE:  
; NAME/KEY: SIGNAL  
; LOCATION: (1)..(26)  
; OTHER INFORMATION:  
; FEATURE:  
; NAME/KEY: mat\_peptide



Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 51 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 98

RESULT 14  
US-09-280-030-66  
; Sequence 66, Application US/09280030A  
; Patent No. 6506595  
; GENERAL INFORMATION:  
; APPLICANT: Sato, Seiji  
; APPLICANT: Higashikuni, Naohiko  
; APPLICANT: Kudo, Toshiyuki  
; APPLICANT: Kondo, Masaaki  
; TITLE OF INVENTION: DNAS ENCODING NEW FUSION PROTEINS AND PROCESSES FOR  
; TITLE OF INVENTION: PREPARING USEFUL POLYPEPTIDES THROUGH EXPRESSION OF THE  
; TITLE OF INVENTION: DNAS  
; FILE REFERENCE: 382.1026  
; CURRENT APPLICATION NUMBER: US/09/280,030A  
; CURRENT FILING DATE: 1999-03-26  
; EARLIER APPLICATION NUMBER: JP10-87339/1998  
; EARLIER FILING DATE: 1998-03-31  
; NUMBER OF SEQ ID NOS: 66  
; SOFTWARE: PatentIn Ver. 2.0  
; SEQ ID NO 66  
; LENGTH: 245  
; TYPE: PRT  
; ORGANISM: Artificial Sequence  
; FEATURE:  
; OTHER INFORMATION: Description of Artificial Sequence: Designated is  
; OTHER INFORMATION: an amino acid sequence of MWPsp-MWPmp20-TEV-G-GH  
US-09-280-030-66

Query Match 98.1%; Score 255; DB 4; Length 245;  
Best Local Similarity 100.0%; Pred. No. 4.1e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 55 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 102

RESULT 15  
US-08-784-582-71  
; Sequence 71, Application US/08784582  
; Patent No. 6110707  
; GENERAL INFORMATION:  
; APPLICANT: Newgard, Christopher B.  
; APPLICANT: Halban, Philippe A.  
; APPLICANT: No. 6110707mington, Karl D.  
; APPLICANT: Clark, Samuel A.  
; APPLICANT: Thigpen, Anice E.  
; APPLICANT: Quaade, Christian  
; APPLICANT: Kruse, Fred  
; APPLICANT: McGarry, Dennis  
; TITLE OF INVENTION: RECOMBINANT EXPRESSION OF PROTEINS FROM

; TITLE OF INVENTION: SECRETORY CELL LINES  
; NUMBER OF SEQUENCES: 79  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Arnold, White & Durkee  
; STREET: P.O. Box 4433  
; CITY: Houston  
; STATE: Texas  
; COUNTRY: USA  
; ZIP: 77210  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/08/784,582  
; FILING DATE: Concurrently Herewith  
; CLASSIFICATION: 435  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 60/028,427  
; FILING DATE: 15-OCT-1996  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: US 08/589,028  
; FILING DATE: 19-JAN-1996  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Highlander, Steven L.  
; REGISTRATION NUMBER: 37,642  
; REFERENCE/DOCKET NUMBER: UTSD:514  
; TELECOMMUNICATION INFORMATION:  
; TELEPHONE: 512/418-3000  
; TELEFAX: 512/474-7577  
; INFORMATION FOR SEQ ID NO: 71:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 274 amino acids  
; TYPE: amino acid  
; STRANDEDNESS:  
; TOPOLOGY: linear  
US-08-784-582-71

Query Match 98.1%; Score 255; DB 3; Length 274;  
Best Local Similarity 100.0%; Pred. No. 4.7e-29;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 27 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 74

Search completed: July 15, 2004, 16:42:30  
Job time : 9.40485 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:19 ; Search time 5.48507 Seconds  
(without alignments)  
859.311 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 283366 seqs, 96191526 residues

Total number of hits satisfying chosen parameters: 283366

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : PIR\_78:\*

1: pir1:\*

2: pir2:\*

3: pir3:\*

4: pir4:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result	Query					Description
No.	Score	Match	Length	DB	ID	
1	255	98.1	217	1	STHU	somatotropin 1 pre
2	255	98.1	217	2	I67410	somatotropin - rhe
3	228	87.7	217	1	STHUV	somatotropin 2 pre
4	228	87.7	256	1	STHUV2	somatotropin 2 pre
5	213	81.9	212	2	I67408	chorionic somatoma
6	213	81.9	217	2	I53267	chorionic somatoma
7	205	78.8	217	2	I67411	somatotropin - rhe
8	201	77.3	217	2	I67409	chorionic somatoma
9	197	75.8	215	2	A26449	choriomammotropin
10	197	75.8	217	1	LCHUC	choriomammotropin
11	197	75.8	217	2	E32435	choriomammotropin
12	161.5	62.1	216	1	STMS	somatotropin precu
13	160.5	61.7	190	2	PN0140	somatotropin - sei

14	159.5	61.3	190	1	STHO	somatotropin - hor
15	159.5	61.3	190	2	JK0219	somatotropin - Afr
16	159.5	61.3	190	2	JS0429	somatotropin - Arc
17	159.5	61.3	216	1	STRT	somatotropin precu
18	159.5	61.3	216	1	STPG	somatotropin precu
19	159.5	61.3	216	2	I46145	somatotropin precu
20	159.5	61.3	216	2	S49483	somatotropin precu
21	159.5	61.3	216	2	B49159	somatotropin - gol
22	159.5	61.3	216	2	JC4632	somatotropin precu
23	156.5	60.2	216	2	A37782	somatotropin precu
24	155.5	59.8	190	1	A61584	somatotropin - alp
25	150	57.7	216	2	JC1514	somatotropin precu
26	148	56.9	191	2	A60625	somatotropin - gre
27	146	56.2	163	2	JN0387	somatotropin - sei
28	144	55.4	190	2	S21750	somatotropin - Rus
29	144	55.4	216	2	A60509	somatotropin precu
30	142.5	54.8	217	1	STBO	somatotropin precu
31	142.5	54.8	217	1	STSH	somatotropin precu
32	142.5	54.8	217	1	STGT	somatotropin precu
33	142.5	54.8	217	2	S32682	somatotropin - dom
34	140	53.8	216	2	S04929	somatotropin precu
35	132	50.8	190	2	A56816	somatotropin - bul
36	132	50.8	215	2	I51188	somatotropin - bul
37	128	49.2	195	2	I51250	somatotropin - bow
38	128	49.2	215	2	JS0037	somatotropin precu
39	122	46.9	199	2	B32435	choriomammotropin-
40	116	44.6	183	2	A60623	somatotropin - blu
41	98.5	37.9	87	4	I67761	EST/beta-Gal mutan
42	97	37.3	200	2	I51114	growth hormone - g
43	87	33.5	210	2	S69263	growth hormone II
44	87	33.5	210	2	S69262	growth hormone I p
45	87	33.5	210	2	S02764	somatotropin precu

## ALIGNMENTS

### RESULT 1

STHU

somatotropin 1 precursor [validated] - human

N;Alternate names: growth hormone 1; hGH-N; pituitary somatotropin

N;Contains: growth hormone 5K peptide; somatotropin 1, long form; somatotropin 1, short form

C;Species: Homo sapiens (man)

C;Date: 24-Apr-1984 #sequence\_revision 10-Feb-1995 #text\_change 08-Dec-2000

C;Accession: A93731; A32435; A93694; A94247; A90051; A93397; A93778; A91764; A90217; A92311; A61466; S09685; I84549; A01510

R;DeNoto, F.M.; Moore, D.D.; Goodman, H.M.

Nucleic Acids Res. 9, 3719-3730, 1981

A;Title: Human growth hormone DNA sequence and mRNA structure: possible alternative splicing.

A;Reference number: A93731; MUID:82014939; PMID:6269091

A;Accession: A93731

A;Molecule type: DNA

A;Residues: 1-217 <DEN>

A;Cross-references: GB:V00520

A;Note: the 20K short form somatotropin lacks residues 58-72 (32-46 in the active hormone) as the result of splicing at the alternate junction of the second intron during mRNA processing

R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seuberg, P.H.

Genomics 4, 479-497, 1989

A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.

A;Reference number: A32435; MUID:89307277; PMID:2744760

A;Accession: A32435

A;Molecule type: DNA

A;Residues: 1-217 <CHE>

A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52549.1; PID:g183149

R;Roskam, W.; Rougeon, F.

Nucleic Acids Res. 7, 305-320, 1979

A;Title: Molecular cloning and nucleotide sequence of the human growth hormone structural gene.

A;Reference number: A93694; MUID:80034477; PMID:386281

A;Accession: A93694

A;Molecule type: mRNA

A;Residues: 1-217 <ROS>

A;Cross-references: GB:V00519

A;Note: 35-Pro was also found

R;Martial, J.A.; Hallewell, R.A.; Baxter, J.D.; Goodman, H.M.

Science 205, 602-607, 1979

A;Title: Human growth hormone: complementary DNA cloning and expression in bacteria.

A;Reference number: A94247; MUID:79203293; PMID:377496

A;Accession: A94247

A;Molecule type: mRNA

A;Residues: 1-217 <MAR>

R;Li, C.H.; Dixon, J.S.; Liu, W.K.

Arch. Biochem. Biophys. 133, 70-91, 1969

A;Title: Human pituitary growth hormone. XIX. The primary structure of the hormone.

A;Reference number: A90048; MUID:69289202; PMID:5810834

A;Contents: annotation

R;Li, C.H.; Dixon, J.S.

Arch. Biochem. Biophys. 146, 233-236, 1971

A;Title: Human pituitary growth hormone. XXXII. The primary structure of the hormone: revision.

A;Reference number: A90051; MUID:72143935; PMID:5144027

A;Accession: A90051

A;Molecule type: protein

A;Residues: 27-94;96-217 <LIC>

R;Niall, H.D.

Nature New Biol. 230, 90-91, 1971

A;Title: Revised primary structure for human growth hormone.

A;Reference number: A93397; MUID:71139765; PMID:5279046

A;Accession: A93397

A;Molecule type: protein

A;Residues: 27-51 <NIA>

R;Niall, H.D.; Hogan, M.L.; Sauer, R.; Rosenblum, I.Y.; Greenwood, F.C.

Proc. Natl. Acad. Sci. U.S.A. 68, 866-869, 1971

A;Title: Sequences of pituitary and placental lactogenic and growth hormones: evolution from a primordial peptide by gene reduplication.

A;Reference number: A93778; MUID:71153968; PMID:5279528

A;Accession: A93778  
A;Molecule type: protein  
A;Residues: 119-120;157-159 <NI2>  
R;Niall, H.D.  
in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin,  
Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972  
A;Title: The chemistry of the human lactogenic hormones.  
A;Reference number: A94427  
A;Contents: annotation; somatotropin revision  
R;Bewley, T.A.; Dixon, J.S.; Li, C.H.  
Int. J. Pept. Protein Res. 4, 281-287, 1972  
A;Title: Sequence comparison of human pituitary growth hormone, human chorionic  
somatomammotropin, and ovine pituitary growth and lactogenic hormones.  
A;Reference number: A91764; MUID:73092028; PMID:4675454  
A;Accession: A91764  
A;Molecule type: protein  
A;Residues: 27-217 <BEW>  
R;Lewis, U.J.; Bonewald, L.F.; Lewis, L.J.  
Biochem. Biophys. Res. Commun. 92, 511-516, 1980  
A;Title: The 20,000-dalton variant of human growth hormone: location of the  
amino acid deletions.  
A;Reference number: A90217; MUID:80130196; PMID:7356479  
A;Contents: somatotropin, 20K short variant  
A;Accession: A90217  
A;Molecule type: protein  
A;Residues: 46-57;73-80 <LEW>  
R;Chapman, G.E.; Rogers, K.M.; Brittain, T.; Bradshaw, R.A.; Bates, O.J.;  
Turner, C.; Cary, P.D.; Crane-Robinson, C.  
J. Biol. Chem. 256, 2395-2401, 1981  
A;Title: The 20,000 molecular weight variant of human growth hormone.  
Preparation and some physical and chemical properties.  
A;Reference number: A92311; MUID:81117361; PMID:7462247  
A;Contents: somatotropin, 20K short variant  
A;Accession: A92311  
A;Molecule type: protein  
A;Residues: 27-57;73-79 <CHA>  
R;Singh, R.N.P.; Seavey, B.K.; Lewis, L.J.; Lewis, U.J.  
J. Protein Chem. 2, 425-436, 1983  
A;Title: Human growth hormone peptide 1-43: isolation from pituitary glands.  
A;Reference number: A61466  
A;Accession: A61466  
A;Molecule type: protein  
A;Residues: 27-69 <SIN>  
A;Note: growth hormone 5K peptide has insulin potentiating activity; its  
physiological production is uncertain  
R;Robson, V.M.J.; Rae, I.D.; NG, F.  
Biol. Chem. Hoppe-Seyler 371, 423-431, 1990  
A;Title: Identification of the aspartimide structure in a previously-reported  
peptide.  
A;Reference number: S09685; MUID:90334745; PMID:2378679  
A;Accession: S09685  
A;Molecule type: protein  
A;Residues: 27-34,'L',36-47 <ROB>  
R;de Vos, A.M.; Ultsch, M.; Kossiakoff, A.A.  
Science 255, 306-312, 1992  
A;Title: Human growth hormone and extracellular domain of its receptor: crystal  
structure of the complex.

A;Reference number: A41728; MUID:92196577; PMID:1549776  
A;Contents: annotation; X-ray crystallography, 2.8 angstroms  
A;Note: the structure of the complex with growth hormone receptor is described  
R;Gray, G.L.; Baldridge, J.S.; McKeown, K.S.; Heyneker, H.L.; Chang, C.N.  
Gene 39, 247-254, 1985  
A;Title: Periplasmic production of correctly processed human growth hormone in  
Escherichia coli: natural and bacterial signal sequences are interchangeable.  
A;Reference number: I41126; MUID:86137393; PMID:3912261  
A;Accession: I84549  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-26 <RES>  
A;Cross-references: GB:M14398; NID:g183158; PIDN:AAA52554.1; PID:g183159  
C;Comment: The gene for this hormone is transcribed only in somatotrophic cells  
of the anterior pituitary.  
C;Comment: About 90% of somatotropin is the 22K long form.  
C;Genetics:  
A;Gene: GDB:GH1  
A;Cross-references: GDB:119982; OMIM:139250  
A;Map position: 17q23.1-17q23.3  
A;Introns: 4/1; 57/3; 97/3; 152/3  
C;Superfamily: prolactin  
C;Keywords: alternative splicing; hormone; pituitary  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;27-217/Product: somatotropin 1, long form #status experimental <SOL>  
F;27-69/Product: growth hormone 5K peptide #status experimental <5KP>  
F;27-57,73-217/Product: somatotropin 1, short form #status experimental <SOS>  
F;79-191,208-215/Disulfide bonds: #status experimental

Query Match 98.1%; Score 255; DB 1; Length 217;  
Best Local Similarity 100.0%; Pred. No. 1.9e-24;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 2  
I67410  
somatotropin - rhesus macaque  
N;Alternate names: growth hormone  
C;Species: Macaca mulatta (rhesus macaque)  
C;Date: 31-May-1996 #sequence\_revision 31-May-1996 #text\_change 16-Jul-1999  
C;Accession: I67410; A05094  
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.  
Endocrinology 133, 1744-1752, 1993  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related  
complementary deoxyribonucleic acids differentially expressed during pregnancy  
in the rhesus monkey placenta.  
A;Reference number: I53267; MUID:94008724; PMID:8404617  
A;Accession: I67410  
A;Status: translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-217 <RES>  
A;Cross-references: GB:L16556; NID:g293114; PIDN:AAA18842.1; PID:g293115  
R;Li, C.H.; Chung, D.; Lahm, H.W.; Stein, S.

Arch. Biochem. Biophys. 245, 287-291, 1986  
A;Title: The primary structure of monkey pituitary growth hormone.  
A;Reference number: A05094; MUID:86129460; PMID:3080959  
A;Accession: A05094  
A;Molecule type: protein  
A;Residues: 27-99, 'Q', 101-178, 'D', 180-217 <LIC>  
A;Note: the monkey species is not identified in the reference  
R;Raben, M.S.  
Science 125, 883-884, 1957  
A;Title: Preparation of growth hormone from pituitaries of man and monkey.  
A;Reference number: A44774  
A;Contents: annotation; identification of source organism  
C;Superfamily: prolactin

Query Match 98.1%; Score 255; DB 2; Length 217;  
Best Local Similarity 100.0%; Pred. No. 1.9e-24;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 3  
STHUV  
somatotropin 2 precursor - human  
N;Alternate names: growth hormone 2; growth hormone variant; hGH-V; placental somatotropin  
N;Contains: somatotropin 2, long splice form; somatotropin 2, short splice form  
C;Species: Homo sapiens (man)  
C;Date: 17-Dec-1982 #sequence\_revision 10-Feb-1995 #text\_change 21-Jul-2000  
C;Accession: D32435; B28072; A01511; I52104; A60711  
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.  
Genomics 4, 479-497, 1989  
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.  
A;Reference number: A32435; MUID:89307277; PMID:2744760  
A;Accession: D32435  
A;Molecule type: DNA  
A;Residues: 1-217 <CHE>  
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52552.1; PID:g183152  
R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.  
J. Biol. Chem. 263, 9001-9006, 1988  
A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.  
A;Reference number: A92725; MUID:88243769; PMID:3379057  
A;Accession: B28072  
A;Molecule type: mRNA  
A;Residues: 1-217 <COO>  
R;Seeburg, P.H.  
DNA 1, 239-249, 1982  
A;Title: The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.  
A;Reference number: A01511; MUID:83182010; PMID:7169009  
A;Accession: A01511  
A;Molecule type: DNA

A;Residues: 1-34, 'P', 36-217 <SEE>  
 R;Igout, A.; Scippo, M.L.; Franken, F.; Hennen, G.  
 Arch. Int. Physiol. Biochim. 96, 63-67, 1988  
 A;Title: Cloning and nucleotide sequence of placental hGH-V cDNA.  
 A;Reference number: I52104; MUID:89024984; PMID:2460050  
 A;Accession: I52104  
 A;Status: preliminary; translated from GB/EMBL/DDBJ  
 A;Molecule type: mRNA  
 A;Residues: 1-217 <IGO>  
 A;Cross-references: GB:M38451; NID:g183179; PIDN:AAA35891.1; PID:g183180  
 R;Frankenne, F.; Scippo, M.L.; Van Beeumen, J.; Igout, A.; Hennen, G.  
 J. Clin. Endocrinol. Metab. 71, 15-18, 1990  
 A;Title: Identification of placental human growth hormone as the growth hormone-V gene expression product.  
 A;Reference number: A60711; MUID:90317018; PMID:2196278  
 A;Accession: A60711  
 A;Molecule type: protein  
 A;Residues: 27-44;46-57 <FRA>  
 A;Experimental source: tissue placenta  
 A;Note: partial glycosylation was demonstrated by lectin binding  
 C;Comment: This gene is expressed by the placenta.  
 C;Genetics:  
 A;Gene: GDB:GH2  
 A;Cross-references: GDB:119983; OMIM:139240  
 A;Map position: 17q22-17q24  
 A;Introns: 4/1; 57/3; 97/3; 152/3  
 C;Superfamily: prolactin  
 C;Keywords: alternative splicing; glycoprotein; hormone; placenta  
 F;1-26/Domain: signal sequence #status predicted <SIG>  
 F;27-217/Product: somatotropin 2, long splice form #status predicted <SOL>  
 F;27-57,73-217/Product: somatotropin 2, short splice form #status predicted <SOS>  
 F;79-191,208-215/Disulfide bonds: #status predicted  
 F;166/Binding site: carbohydrate (Asn) (covalent) #status predicted  
  
 Query Match 87.7%; Score 228; DB 1; Length 217;  
 Best Local Similarity 91.7%; Pred. No. 4.6e-21;  
 Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;  
  
 Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
 |||||||:|||||:||||| ||:||||:|||||:|||||:|||||:|||||:|||||:  
 Db 27 FPTIPLSRLFDNAMLARRLYQLAYDTYQEFEAYILKEQKYSFLQNP 74

RESULT 4

STHUV2

somatotropin 2 precursor, splice form 2 - human

N;Alternate names: growth hormone variant-2; placental somatotropin form 2

C;Species: Homo sapiens (man)

C;Date: 30-Sep-1989 #sequence\_revision 10-Feb-1995 #text\_change 02-Sep-1997

C;Accession: A28072

R;Cooke, N.E.; Ray, J.; Emery, J.G.; Liebhaber, S.A.

J. Biol. Chem. 263, 9001-9006, 1988

A;Title: Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.

A;Reference number: A92725; MUID:88243769; PMID:3379057

A;Accession: A28072

A;Molecule type: mRNA  
A;Residues: 1-256 <COO>  
A;Note: an alternative splice junction for intron 4 is used  
C;Genetics:  
A;Gene: GDB:GH2  
A;Cross-references: GDB:119983; OMIM:139240  
A;Map position: 17q22-17q24  
A;Introns: 4/1; 57/3; 97/3; 152/3  
C;Superfamily: prolactin  
C;Keywords: alternative splicing; hormone; placenta  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;27-256/Product: somatotropin 2 splice form 2 #status predicted <MAT>

Query Match 87.7%; Score 228; DB 1; Length 256;  
Best Local Similarity 91.7%; Pred. No. 5.5e-21;  
Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|||:|||||:|||||:||:||||:|||||:|||||:|||||:|||||:  
Db 27 FPTIPLSRLFDNAMLRARRLYQLAYDTYQEFEEAYILKEQKYSFLQNP 74

RESULT 5  
I67408  
chorionic somatomammotropin-2 - rhesus macaque (fragment)  
C;Species: Macaca mulatta (rhesus macaque)  
C;Date: 31-May-1996 #sequence\_revision 31-May-1996 #text\_change 16-Jul-1999  
C;Accession: I67408  
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.  
Endocrinology 133, 1744-1752, 1993  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.  
A;Reference number: I53267; MUID:94008724; PMID:8404617  
A;Accession: I67408  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-212 <RES>  
A;Cross-references: GB:L16553; NID:g293110; PIDN:AAA18840.1; PID:g293111  
C;Superfamily: prolactin

Query Match 81.9%; Score 213; DB 2; Length 212;  
Best Local Similarity 78.7%; Pred. No. 3.3e-19;  
Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;  
  
Qy 3 PTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|:|:|||||:||:|:|||||:|||||:|||||:|||||:||:| :||:  
Db 23 PSVPLSRLFDHAMIQAHRLHQQLAFDTYQEFEEAYIPKEKKHSILMENP 69

RESULT 6  
I53267  
chorionic somatomammotropin-1 - rhesus macaque  
C;Species: Macaca mulatta (rhesus macaque)  
C;Date: 31-May-1996 #sequence\_revision 31-May-1996 #text\_change 16-Jul-1999  
C;Accession: I53267  
R;Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.  
A;Reference number: I53267; MUID:94008724; PMID:8404617  
A;Accession: I53267  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-217 <RES>  
A;Cross-references: GB:L16552; NID:g293108; PIDN:AAA18839.1; PID:g293109  
C;Superfamily: prolactin

Query Match 81.9%; Score 213; DB 2; Length 217;  
Best Local Similarity 78.7%; Pred. No. 3.4e-19;  
Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMILRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
|:|||||:||:||:|||||:|||||:||:|| :||  
Pb 28 PSVPLSRLFDHAMIOAHLHLQAFDTYQEFEAYIPKEKKHSLMENP 74

## RESULT 7

I67411

somatotropin - rhesus macaque

N;Alternate names: growth hormone

C;Species: *Macaca mulatta* (rhesus macaque)

C;Date: 31-May-1996 #sequence revision 31-May-1996 #text change 16-Jul-1999

C;Accession: I67411

R; Golos, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993

**A;Title:** Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.

A: Reference number: I53267; MUID: 94008724; PMID: 8404617

A:Accession: I67411

A>Status: preliminary; translated from GB/EMBL/DDBJ

A: Molecule type: mRNA

A:Residues: 1-217 <RES>

A;Cross-references: GB:L16555; NID:g293116; PIDN:AAA20180.1; PID:g293117  
C;Superfamily: prolactin

Query Match 78.8%; Score 205; DB 2; Length 217;  
Best Local Similarity 79.2%; Pred. No. 3.4e-18;  
Matches 38; Conservative 5; Mismatches 5; Indels 0; Gaps 0;

QY	2 FPTIPLSRLFDNAMLRAHRLHQLAFTDTYQEFEAYIPKEQKYSFLQNP 49
	:  :       :      :             :
Pb	27 FPTIPLSRLFDNAMLRAHRLHQLAFTDTYQEFEAYIPKEQKYSFLQNP 74

## RESULT 8

REF ID  
T67409

167409 chorionic somatomammotropin-3 = rhesus macaque

C:Species: *Macaca mulatta* (rhesus macaque)

C:Date: 31-May-1996 #sequence revision 31-May-1996 #text change 16-Jul-1999

C, Date: 31 May 1998  
C:Accession: T67409

B:Gales, T.G.; Durning, M.; Fisher, J.M.; Fowler, P.D.

Endocrinology 133, 1744-1752, 1993  
A;Title: Cloning of four growth hormone/chorionic somatomammotropin-related complementary deoxyribonucleic acids differentially expressed during pregnancy in the rhesus monkey placenta.  
A;Reference number: I53267; MUID:94008724; PMID:8404617  
A;Accession: I67409  
A;Status: preliminary; translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-217 <RES>  
A;Cross-references: GB:L16554; NID:g293112; PIDN:AAA18841.1; PID:g293113  
C;Superfamily: prolactin

Query Match 77.3%; Score 201; DB 2; Length 217;  
Best Local Similarity 74.5%; Pred. No. 1.1e-17;  
Matches 35; Conservative 8; Mismatches 4; Indels 0; Gaps 0;  
  
Qy 3 PTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|:||||||| |:|||||||||: ||||:||:| : ||  
Db 28 PSVPLSRLFDNIMMQAHRLHQIQLAFDTYQEFEKTYIPKEKKHSLMGNP 74

RESULT 9  
A26449  
choriomammotropin precursor (allele hCS-3) - human  
C;Species: Homo sapiens (man)  
C;Date: 30-Jun-1988 #sequence\_revision 30-Jun-1988 #text\_change 28-Jul-1995  
C;Accession: A26449  
R;Hirt, H.; Kimelman, J.; Birnbaum, M.J.; Chen, E.Y.; Seeburg, P.H.; Eberhardt, N.L.; Barta, A.  
DNA 6, 59-70, 1987  
A;Title: The human growth hormone gene locus: structure, evolution, and allelic variations.  
A;Reference number: A26449; MUID:87161235; PMID:3030680  
A;Accession: A26449  
A;Molecule type: DNA  
A;Residues: 1-215 <HIR>  
C;Superfamily: prolactin  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;27-215/Product: choriomammotropin, hCS-3 allele #status predicted <MAT>

Query Match 75.8%; Score 197; DB 2; Length 215;  
Best Local Similarity 80.0%; Pred. No. 3.4e-17;  
Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;  
  
Qy 4 TIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQN 48  
|:|||||||:|||:||| | ||| | |||:|||:||| :  
Db 29 TVPLSRLFDHAMLQAHRAHQIQLAIDTYQEFETYIPKDQKYSFLHD 73

RESULT 10  
LCHUC  
choriomammotropin A precursor [validated] - human  
N;Alternate names: chorionic somatomammotropin 1; placental lactogen  
C;Species: Homo sapiens (man)  
C;Date: 23-Oct-1981 #sequence\_revision 23-Oct-1981 #text\_change 08-Dec-2000  
C;Accession: C32435; A94422; I52342; A93833; A93192; A90054; A94427; A61283; I55229; I59658; A01512

R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.; Seeburg, P.H.  
Genomics 4, 479-497, 1989  
A;Title: The human growth hormone locus: nucleotide sequence, biology, and evolution.  
A;Reference number: A32435; MUID:89307277; PMID:2744760  
A;Accession: C32435  
A;Molecule type: DNA  
A;Residues: 1-217 <CHE>  
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52551.1; PID:g183151  
R;Goodman, H.M.; DeNoto, F.; Fiddes, J.C.; Hallewell, R.A.; Page, G.S.; Smith, S.; Tischer, E.  
in Mobilization and Reassembly of Genetic Information, Scott, W.A., Werner, R., Joseph, D.R., and Schultz, J., eds., pp.155-179, Academic Press, New York, 1980  
A;Reference number: A94422  
A;Accession: A94422  
A;Molecule type: mRNA  
A;Residues: 1-217 <GOO>  
R;Tanaka, M.; Masuda, N.; Watahiki, M.; Yamakawa, M.; Shimizu, K.; Nagai, J.; Nakashima, K.  
Biochem. Int. 16, 287-292, 1988  
A;Title: cDNA cloning of human chorionic somatomammotropin-1 mRNA whose transcription was initiated at the 5' region of the TATA box.  
A;Reference number: I52342; MUID:88209096; PMID:2835050  
A;Accession: I52342  
A;Status: translated from GB/EMBL/DDBJ  
A;Molecule type: mRNA  
A;Residues: 1-3 <TAN>  
A;Cross-references: GB:M35419; NID:g506822  
R;Sherwood, L.M.; Burstein, Y.; Schechter, I.  
Proc. Natl. Acad. Sci. U.S.A. 76, 3819-3823, 1979  
A;Title: Primary structure of the NH-2-terminal extra piece of the precursor to human placental lactogen.  
A;Reference number: A93833; MUID:80034970; PMID:291043  
A;Accession: A93833  
A;Molecule type: protein  
A;Residues: 1,3-26 <SHE>  
A;Experimental source: placenta  
R;Shine, J.; Seeburg, P.H.; Martial, J.A.; Baxter, J.D.; Goodman, H.M.  
Nature 270, 494-499, 1977  
A;Title: Construction and analysis of recombinant DNA for human chorionic somatomammotropin.  
A;Reference number: A93192; MUID:78071761; PMID:593368  
A;Accession: A93192  
A;Molecule type: DNA  
A;Residues: 50-217 <SHI>  
A;Experimental source: placenta  
R;Li, C.H.; Dixon, J.S.; Chung, D.  
Arch. Biochem. Biophys. 155, 95-110, 1973  
A;Title: Amino acid sequence of human chorionic somatomammotropin.  
A;Reference number: A90054; MUID:73201971; PMID:4712450  
A;Accession: A90054  
A;Molecule type: protein  
A;Residues: 27-217 <LIC>  
A;Experimental source: placenta  
R;Niall, H.D.

in Prolactin and Carcinogenesis, Proc. Fourth Tenovus Workshop Prolactin, Griffiths, K., ed., pp.13-20, Alpha Omega Alpha Press, Cardiff, Wales, 1972

A;Title: The chemistry of the human lactogenic hormones.

A;Reference number: A94427

A;Accession: A94427

A;Molecule type: protein

A;Residues: 27-217 <NIAC>

A;Experimental source: placenta

R;Nic A Bhaird, N.; Tipton, K.F.

Biochem. Soc. Trans. 19, 20S, 1991

A;Title: Catechol-O-methyltransferase from human placenta: purification and some properties.

A;Reference number: A61283; MUID:91244006; PMID:2037148

A;Accession: A61283

A;Molecule type: protein

A;Residues: 27-46 <NIC>

A;Note: choriomammotropin apparently copurified with placental catechol-O-methyltransferase

R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.

Nature New Biol. 233, 59-61, 1971

A;Title: Amino-acid sequence of human placental lactogen.

A;Reference number: A93401; MUID:72016313; PMID:5286363

A;Contents: annotation

R;Sherwood, L.M.; Handwerger, S.; McLaurin, W.D.; Lanner, M.

Nature New Biol. 235, 64, 1972

A;Reference number: A93405

A;Contents: annotation

R;Schneider, A.B.; Kowalski, K.; Russell, J.; Sherwood, L.M.

J. Biol. Chem. 254, 3782-3787, 1979

A;Title: Identification of the interchain disulfide bonds of dimeric human placental lactogen.

A;Reference number: A92251; MUID:79173081; PMID:438159

A;Contents: annotation; dimeric disulfide bonds

R;Selby, M.J.; Barta, A.; Baxter, J.D.; Bell, G.I.; Eberhardt, N.L.

J. Biol. Chem. 259, 13131-13138, 1984

A;Title: Analysis of a major human chorionic somatomammotropin gene. Evidence for two functional promoter elements.

A;Reference number: I55229; MUID:85030426; PMID:6208192

A;Accession: I55229

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: DNA

A;Residues: 1-217 <RES>

A;Cross-references: GB:K02401; NID:g181120; PIDN:AAA52115.1; PID:g181121

R;Seeburg, P.H.; Shine, J.; Martial, J.A.; Ullrich, A.; Goodman, H.

Trans. Assoc. Am. Physicians 90, 109-116, 1977

A;Title: Nucleotide sequence of a human gene coding for a polypeptide hormone.

A;Reference number: I59658; MUID:78160787; PMID:611657

A;Accession: I59658

A;Status: translated from GB/EMBL/DDBJ

A;Molecule type: mRNA

A;Residues: 160-217 <RE2>

A;Cross-references: GB:M25118; NID:g181124; PIDN:AAA35721.1; PID:g181125

C;Genetics:

A;Gene: GDB:CSH1

A;Cross-references: GDB:119084; OMIM:150200

A;Map position: 17q22-17q24

A;Introns: 4/1; 57/3; 97/3; 152/3

C;Superfamily: prolactin  
C;Keywords: hormone; placenta  
F;1-26/Domain: signal sequence #status experimental <SIG>  
F;27-217/Product: choriomammotropin A #status experimental <MAT>  
F;79-191/Disulfide bonds: #status experimental  
F;208-215/Disulfide bonds: (in monomeric form) #status experimental  
F;208/Disulfide bonds: interchain (to 215 in dimeric form) #status experimental  
F;215/Disulfide bonds: interchain (to 208 in dimeric form) #status experimental

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Best Local Similarity 80.0%; Pred. No. 3.4e-17;  
Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;  
  
Qy 4 TIPLSRLFDNAMLRAHRLHQIADFDTYQEFEAYIPKEQKYSFLQN 48  
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RESULT 11  
E32435  
choriomammotropin B precursor - human  
N;Alternate names: chorionic somatomammotropin 2  
C;Species: Homo sapiens (man)  
C;Date: 29-Dec-1989 #sequence\_revision 29-Dec-1989 #text\_change 16-Jul-1999  
C;Accession: E32435  
R;Chen, E.Y.; Liao, Y.C.; Smith, D.H.; Barrera-Saldana, H.A.; Gelinas, R.E.;  
Seuberg, P.H.  
Genomics 4, 479-497, 1989  
A;Title: The human growth hormone locus: nucleotide sequence, biology, and  
evolution.  
A;Reference number: A32435; MUID:89307277; PMID:2744760  
A;Accession: E32435  
A;Status: preliminary  
A;Molecule type: DNA  
A;Residues: 1-217 <CHE>  
A;Cross-references: GB:J03071; NID:g183148; PIDN:AAA52553.1; PID:g183153  
C;Genetics:  
A;Gene: GDB:CSH2  
A;Cross-references: GDB:119813; OMIM:118820  
A;Map position: 17q22-17q24  
C;Superfamily: prolactin

Query Match 75.8%; Score 197; DB 2; Length 217;  
Best Local Similarity 80.0%; Pred. No. 3.4e-17;  
Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;  
  
Qy 4 TIPLSRLFDNAMLRAHRLHQIADFDTYQEFEAYIPKEQKYSFLQN 48  
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Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDQKYSFLHD 73

RESULT 12  
STMS  
somatotropin precursor - mouse  
N;Alternate names: growth hormone  
C;Species: Mus musculus (house mouse)  
C;Date: 30-Sep-1987 #sequence\_revision 30-Sep-1987 #text\_change 28-May-1999

C;Accession: B23911  
R;Linzer, D.I.H.; Talamantes, F.  
J. Biol. Chem. 260, 9574-9579, 1985  
A;Title: Nucleotide sequence of mouse prolactin and growth hormone mRNAs and expression of these mRNAs during pregnancy.  
A;Reference number: A92548; MUID:85261358; PMID:2991252  
A;Accession: B23911  
A;Molecule type: mRNA  
A;Residues: 1-216 <LIN>  
A;Cross-references: GB:X02891; GB:K03232; NID:g51067; PIDN:CAA26650.1;  
PID:g51068  
C;Superfamily: prolactin  
C;Keywords: anterior pituitary; growth factor; hormone  
F;1-26/Domain: signal sequence #status predicted <SIG>  
F;27-216/Product: somatotropin #status predicted <STN>  
F;78-189,206-214/Disulfide bonds: #status predicted

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Best Local Similarity 68.1%; Pred. No. 9.3e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
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Db 27 FPAMPLSSLFNSAVLRAQHLHQLAADTYKEFERAYIPEGQRY-IQN 72

RESULT 13  
PN0140  
somatotropin - sei whale  
N;Alternate names: growth hormone  
C;Species: Balaenoptera borealis (sei whale)  
C;Date: 07-May-1993 #sequence\_revision 07-May-1993 #text\_change 07-May-1999  
C;Accession: PN0140  
R;Yudaev, N.A.; Pankov, Y.A.; Bulatov, A.A.; Osipova, T.A.  
Biokhimiia 47, 1059-1069, 1982  
A;Title: Amino acid sequence of seiwhale somatotropin.  
A;Reference number: PN0140; MUID:83000569; PMID:7115813  
A;Accession: PN0140  
A;Molecule type: protein  
A;Residues: 1-190 <YUD>  
A;Note: article in Russian with English abstract  
C;Superfamily: prolactin  
C;Keywords: growth factor; hormone  
F;52-163,180-188/Disulfide bonds: #status predicted

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Best Local Similarity 68.1%; Pred. No. 1.1e-12;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
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Db 1 FPAMPLSSLFNSAVLRAQHLHELAADTYKEFERAYIPEGQRY-FLQN 46

RESULT 14  
STHO  
somatotropin - horse

N;Alternate names: growth hormone  
C;Species: Equus caballus (domestic horse)  
C;Date: 13-Jul-1981 #sequence\_revision 13-Jul-1981 #text\_change 23-Aug-1996  
C;Accession: A91772; A91395; A91383; A90240; A01514  
R;Zakin, M.M.; Poskus, E.; Langton, A.A.; Ferrara, P.; Santome, J.A.; Dellacha, J.M.; Paladini, A.C.  
Int. J. Pept. Protein Res. 8, 435-444, 1976  
A;Title: Primary structure of equine growth hormone.  
A;Reference number: A91772; MUID:77005410; PMID:965151  
A;Accession: A91772  
A;Molecule type: protein  
A;Residues: 1-190 <ZAK>  
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.  
FEBS Lett. 34, 353-355, 1973  
A;Title: The amino acid sequence of equine growth hormone.  
A;Reference number: A91395; MUID:74020362; PMID:4747849  
A;Accession: A91395  
A;Molecule type: protein  
A;Residues: 1-190 <ZA2>  
R;Zakin, M.M.; Poskus, E.; Dellacha, J.M.; Paladini, A.C.; Santome, J.A.  
FEBS Lett. 25, 77-82, 1972  
A;Title: Amino acid sequences around the cystine residues in equine growth hormone.  
A;Reference number: A91383  
A;Accession: A91383  
A;Molecule type: protein  
A;Residues: 42-69;157-190 <ZA3>  
R;Oliver, L.; Hartree, A.S.  
Biochem. J. 109, 19-24, 1968  
A;Title: Amino acid sequences around the cystine residues in horse growth hormone.  
A;Reference number: A90240; MUID:68368390; PMID:4876100  
A;Accession: A90240  
A;Molecule type: protein  
A;Residues: 176-190 <OLI>  
C;Superfamily: prolactin  
C;Keywords: hormone; pituitary  
F;52-163,180-188/Disulfide bonds: #status experimental

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Best Local Similarity 68.1%; Pred. No. 1.4e-12;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
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Db 1 FPAMPLSSLFANAVLRAQHLHQQLAADTYKEFERAYIPEGQRYS-IQN 46

RESULT 15  
JK0219  
somatotropin - African elephant  
N;Alternate names: growth hormone  
C;Species: Loxodonta africana (African elephant)  
C;Date: 03-Aug-1992 #sequence\_revision 03-Aug-1992 #text\_change 15-Oct-1996  
C;Accession: JK0219  
R;Hulmes, J.D.; Miedel, M.C.; Li, C.H.; Pan, Y.C.E.  
Int. J. Pept. Protein Res. 33, 368-372, 1989

A;Title: Primary structure of elephant growth hormone.  
A;Reference number: JK0219  
A;Accession: JK0219  
A;Molecule type: protein  
A;Residues: 1-190 <HUL>  
A;Experimental source: pituitary gland  
C;Superfamily: prolactin  
F;1-190/Product: somatotropin #status experimental <MAT>

Query Match 61.3%; Score 159.5; DB 2; Length 190;  
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Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
  
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Job time : 5.65174 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:37:41 ; Search time 20.3862 Seconds  
(without alignments)  
751.267 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1285345 seqs, 312560633 residues

Total number of hits satisfying chosen parameters: 1285345

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : Published\_Applications\_AA:\*

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2: /cgn2\_6/ptodata/1/pubpaa/PCT\_NEW\_PUB.pep:\*

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Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

8

Result	Query	SUMMARIES			
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					Description

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2	260	100.0	92	13	US-10-054-873-2	Sequence 2, Appli
3	260	100.0	107	13	US-10-054-873-6	Sequence 6, Appli
4	260	100.0	134	10	US-09-819-094-24	Sequence 24, Appli
5	260	100.0	134	16	US-10-714-067-24	Sequence 24, Appli
6	260	100.0	150	13	US-10-054-873-7	Sequence 7, Appli
7	260	100.0	188	12	US-10-621-693-18	Sequence 18, Appli
8	260	100.0	192	10	US-09-819-094-23	Sequence 23, Appli
9	260	100.0	192	12	US-10-621-693-8	Sequence 8, Appli
10	260	100.0	192	12	US-10-621-693-78	Sequence 78, Appli
11	260	100.0	192	12	US-10-621-693-86	Sequence 86, Appli
12	260	100.0	192	16	US-10-714-067-23	Sequence 23, Appli
13	260	100.0	193	12	US-10-621-693-42	Sequence 42, Appli
14	260	100.0	206	12	US-10-621-693-72	Sequence 72, Appli
15	260	100.0	391	12	US-10-621-693-51	Sequence 51, Appli
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17	260	100.0	576	12	US-10-621-693-39	Sequence 39, Appli
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19	260	100.0	786	12	US-10-621-693-55	Sequence 55, Appli
20	260	100.0	810	12	US-10-621-693-76	Sequence 76, Appli
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23	255	98.1	191	12	US-10-621-693-2	Sequence 2, Appli
24	255	98.1	191	12	US-10-621-693-21	Sequence 21, Appli
25	255	98.1	191	12	US-10-621-693-80	Sequence 80, Appli
26	255	98.1	191	12	US-10-621-693-82	Sequence 82, Appli
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33	255	98.1	191	16	US-10-658-834A-850	Sequence 850, App
34	255	98.1	191	16	US-10-658-834A-851	Sequence 851, App
35	255	98.1	191	16	US-10-658-834A-852	Sequence 852, App
36	255	98.1	191	16	US-10-658-834A-853	Sequence 853, App
37	255	98.1	191	16	US-10-658-834A-854	Sequence 854, App
38	255	98.1	191	16	US-10-658-834A-855	Sequence 855, App
39	255	98.1	191	16	US-10-658-834A-856	Sequence 856, App
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42	255	98.1	191	16	US-10-658-834A-859	Sequence 859, App
43	255	98.1	191	16	US-10-658-834A-860	Sequence 860, App
44	255	98.1	191	16	US-10-658-834A-861	Sequence 861, App
45	255	98.1	191	16	US-10-658-834A-862	Sequence 862, App

## ALIGNMENTS

RESULT 1  
 US-10-054-873-1  
 ; Sequence 1, Application US/10054873  
 ; Publication No. US20020164712A1  
 ; GENERAL INFORMATION:  
 ; APPLICANT: Gan, Zhong Ru

TITLE OF INVENTION: Chimeric Protein Containing an  
Intramolecular Chaperone-Like Sequence

NUMBER OF SEQUENCES: 7

CORRESPONDENCE ADDRESS:

ADDRESSEE: Townsend and Townsend and Crew LLP  
STREET: Two Embarcadero Center, Eighth Floor  
CITY: San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94111-3834

COMPUTER READABLE FORM:

MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30

CURRENT APPLICATION DATA:

APPLICATION NUMBER: US/10/054,873  
FILING DATE: 22-Jan-2002  
CLASSIFICATION: <Unknown>

PRIOR APPLICATION DATA:

APPLICATION NUMBER: WO PCT/CN98/00052  
FILING DATE: 31-MAR-1998  
APPLICATION NUMBER: US 09/423,100  
FILING DATE: 11-DEC-2000

ATTORNEY/AGENT INFORMATION:

NAME: Mycroft, Frank J  
REGISTRATION NUMBER: 46,946  
REFERENCE/DOCKET NUMBER: 020167-000130US

INFORMATION FOR SEQ ID NO: 1:

SEQUENCE CHARACTERISTICS:

LENGTH: 49 amino acids  
TYPE: amino acid  
STRANDEDNESS: <Unknown>  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
SEQUENCE DESCRIPTION: SEQ ID NO: 1:

RESULT 2  
US-10-054-873-2  
; Sequence 2, Application US/10054873  
; Publication No. US20020164712A1  
; GENERAL INFORMATION:  
; APPLICANT: Gan, Zhong Ru  
; TITLE OF INVENTION: Chimeric Protein Containing an  
; Intramolecular Chaperone-Like Sequence  
; NUMBER OF SEQUENCES: 7  
; CORRESPONDENCE ADDRESS:

ADDRESSEE: Townsend and Townsend and Crew LLP  
STREET: Two Embarcadero Center, Eighth Floor  
CITY: San Francisco  
STATE: California  
COUNTRY: USA  
ZIP: 94111-3834  
COMPUTER READABLE FORM:  
MEDIUM TYPE: Floppy disk  
COMPUTER: IBM PC compatible  
OPERATING SYSTEM: PC-DOS/MS-DOS  
SOFTWARE: PatentIn Release #1.0, Version #1.30  
CURRENT APPLICATION DATA:  
APPLICATION NUMBER: US/10/054,873  
FILING DATE: 22-Jan-2002  
CLASSIFICATION: <Unknown>  
PRIOR APPLICATION DATA:  
APPLICATION NUMBER: WO PCT/CN98/00052  
FILING DATE: 31-MAR-1998  
APPLICATION NUMBER: US 09/423,100  
FILING DATE: 11-DEC-2000  
ATTORNEY/AGENT INFORMATION:  
NAME: Mycroft, Frank J  
REGISTRATION NUMBER: 46,946  
REFERENCE/DOCKET NUMBER: 020167-000130US  
INFORMATION FOR SEQ ID NO: 2:  
SEQUENCE CHARACTERISTICS:  
LENGTH: 92 amino acids  
TYPE: amino acid  
STRANDEDNESS: <Unknown>  
TOPOLOGY: linear  
MOLECULE TYPE: protein  
SEQUENCE DESCRIPTION: SEQ ID NO: 2:  
US-10-054-873-2

### RESULT 3

US-10-054-873-6

Sequence 6, Application US/10054873

Publication No. US20020164712A1

GENERAL INFORMATION:

APPLICANT: Gan, Zhong Ru

TITLE OF INVENTION: Chimeric Protein Containing an

Intramolecular Chaperone-Like Sequence

NUMBER OF SEQUENCES: 7

CORRESPONDENCE ADDRESS:

ADDRESSEE: Townsend and Townsend and Crew LLP

STREET: Two Embarcadero Center, Eighth Floor

CITY: San Francisco

; STATE: California

;  
; COUNTRY: USA  
; ZIP: 94111-3834  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/10/054,873  
; FILING DATE: 22-Jan-2002  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: WO PCT/CN98/00052  
; FILING DATE: 31-MAR-1998  
; APPLICATION NUMBER: US 09/423,100  
; FILING DATE: 11-DEC-2000  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Mycroft, Frank J  
; REGISTRATION NUMBER: 46,946  
; REFERENCE/DOCKET NUMBER: 020167-000130US  
; INFORMATION FOR SEQ ID NO: 6:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 107 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: <Unknown>  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; SEQUENCE DESCRIPTION: SEQ ID NO: 6:  
US-10-054-873-6

Query Match 100.0%; Score 260; DB 13; Length 107;  
Best Local Similarity 100.0%; Pred. No. 3.1e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
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Db 1 MFPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 4  
US-09-819-094-24  
; Sequence 24, Application US/09819094  
; Publication No. US20030186382A1  
; GENERAL INFORMATION:  
; APPLICANT: Weiner, Richard I.  
; APPLICANT: Martial, Joseph A.  
; APPLICANT: Struman, Ingrid  
; APPLICANT: Taylor, Robert  
; APPLICANT: Bentzien, Frauke  
; TITLE OF INVENTION: No. US20030186382A1 e1 Antiangiogenic Peptide Agents and  
Their  
; TITLE OF INVENTION: Therapeutic and Diagnostic Use  
; FILE REFERENCE: UCSF-018/02US  
; CURRENT APPLICATION NUMBER: US/09/819,094  
; CURRENT FILING DATE: 2001-03-27  
; PRIOR APPLICATION NUMBER: 09/076,675  
; PRIOR FILING DATE: 1998-05-12

; PRIOR APPLICATION NUMBER: 60/046,394  
; PRIOR FILING DATE: 1997-05-12  
; NUMBER OF SEQ ID NOS: 34  
; SEQ ID NO 24  
; LENGTH: 134  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-819-094-24

Query Match 100.0%; Score 260; DB 10; Length 134;  
Best Local Similarity 100.0%; Pred. No. 4.1e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 5  
US-10-714-067-24  
; Sequence 24, Application US/10714067  
; Publication No. US20040077054A1  
; GENERAL INFORMATION:  
; APPLICANT: Weiner, Richard I.  
; APPLICANT: Martial, Joseph A.  
; APPLICANT: Struman, Ingrid  
; APPLICANT: Taylor, Robert  
; APPLICANT: Bentzien, Frauke  
; TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their  
; TITLE OF INVENTION: Therapeutic and Diagnostic Use  
; FILE REFERENCE: UCSF-018/02US  
; CURRENT APPLICATION NUMBER: US/10/714,067  
; CURRENT FILING DATE: 2003-11-14  
; PRIOR APPLICATION NUMBER: US/09/819,094  
; PRIOR FILING DATE: 2001-03-27  
; PRIOR APPLICATION NUMBER: 09/076,675  
; PRIOR FILING DATE: 1998-05-12  
; PRIOR APPLICATION NUMBER: 60/046,394  
; PRIOR FILING DATE: 1997-05-12  
; NUMBER OF SEQ ID NOS: 34  
; SEQ ID NO 24  
; LENGTH: 134  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-714-067-24

Query Match 100.0%; Score 260; DB 16; Length 134;  
Best Local Similarity 100.0%; Pred. No. 4.1e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 6  
US-10-054-873-7

; Sequence 7, Application US/10054873  
; Publication No. US20020164712A1  
; GENERAL INFORMATION:  
; APPLICANT: Gan, Zhong Ru  
; TITLE OF INVENTION: Chimeric Protein Containing an  
; Intramolecular Chaperone-Like Sequence  
; NUMBER OF SEQUENCES: 7  
; CORRESPONDENCE ADDRESS:  
; ADDRESSEE: Townsend and Townsend and Crew LLP  
; STREET: Two Embarcadero Center, Eighth Floor  
; CITY: San Francisco  
; STATE: California  
; COUNTRY: USA  
; ZIP: 94111-3834  
; COMPUTER READABLE FORM:  
; MEDIUM TYPE: Floppy disk  
; COMPUTER: IBM PC compatible  
; OPERATING SYSTEM: PC-DOS/MS-DOS  
; SOFTWARE: PatentIn Release #1.0, Version #1.30  
; CURRENT APPLICATION DATA:  
; APPLICATION NUMBER: US/10/054,873  
; FILING DATE: 22-Jan-2002  
; CLASSIFICATION: <Unknown>  
; PRIOR APPLICATION DATA:  
; APPLICATION NUMBER: WO PCT/CN98/00052  
; FILING DATE: 31-MAR-1998  
; APPLICATION NUMBER: US 09/423,100  
; FILING DATE: 11-DEC-2000  
; ATTORNEY/AGENT INFORMATION:  
; NAME: Mycroft, Frank J  
; REGISTRATION NUMBER: 46,946  
; REFERENCE/DOCKET NUMBER: 020167-000130US  
; INFORMATION FOR SEQ ID NO: 7:  
; SEQUENCE CHARACTERISTICS:  
; LENGTH: 150 amino acids  
; TYPE: amino acid  
; STRANDEDNESS: <Unknown>  
; TOPOLOGY: linear  
; MOLECULE TYPE: protein  
; SEQUENCE DESCRIPTION: SEQ ID NO: 7:  
US-10-054-873-7

Query Match 100.0%; Score 260; DB 13; Length 150;  
Best Local Similarity 100.0%; Pred. No. 4.6e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49

RESULT 7  
US-10-621-693-18  
; Sequence 18, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.

; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 18  
; LENGTH: 188  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
US-10-621-693-18

Query Match 100.0%; Score 260; DB 12; Length 188;  
Best Local Similarity 100.0%; Pred. No. 6.1e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQ~~L~~A~~F~~DTYQEFEEAYIPKEQKYSFLQNP 49  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQ~~L~~A~~F~~DTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 8  
US-09-819-094-23  
; Sequence 23, Application US/09819094  
; Publication No. US20030186382A1  
; GENERAL INFORMATION:  
; APPLICANT: Weiner, Richard I.  
; APPLICANT: Martial, Joseph A.  
; APPLICANT: Struman, Ingrid  
; APPLICANT: Taylor, Robert  
; APPLICANT: Bentzien, Frauke  
; TITLE OF INVENTION: No. US20030186382A1 e1 Antiangiogenic Peptide Agents and  
Their  
; TITLE OF INVENTION: Therapeutic and Diagnostic Use  
; FILE REFERENCE: UCSF-018/02US  
; CURRENT APPLICATION NUMBER: US/09/819,094  
; CURRENT FILING DATE: 2001-03-27  
; PRIOR APPLICATION NUMBER: 09/076,675  
; PRIOR FILING DATE: 1998-05-12  
; PRIOR APPLICATION NUMBER: 60/046,394  
; PRIOR FILING DATE: 1997-05-12  
; NUMBER OF SEQ ID NOS: 34  
; SEQ ID NO 23  
; LENGTH: 192  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-09-819-094-23

Query Match 100.0%; Score 260; DB 10; Length 192;  
Best Local Similarity 100.0%; Pred. No. 6.2e-27;

Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQ LAFDTYQE FEEAYIPKEQKYSFLQNP 49  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQ LAFDTYQE FEEAYIPKEQKYSFLQNP 49

RESULT 9

US-10-621-693-8

; Sequence 8, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 8  
; LENGTH: 192  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
; FEATURE:  
; NAME/KEY: mat\_peptide  
; LOCATION: (1)..()  
US-10-621-693-8

Query Match 100.0%; Score 260; DB 12; Length 192;

Best Local Similarity 100.0%; Pred. No. 6.2e-27;

Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQ LAFDTYQE FEEAYIPKEQKYSFLQNP 49  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQ LAFDTYQE FEEAYIPKEQKYSFLQNP 49

RESULT 10

US-10-621-693-78

; Sequence 78, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16

; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 78  
; LENGTH: 192  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
US-10-621-693-78

Query Match 100.0%; Score 260; DB 12; Length 192;  
Best Local Similarity 100.0%; Pred. No. 6.2e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQ~~L~~A~~F~~DTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| ||| |||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQ~~L~~A~~F~~DTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 11  
US-10-621-693-86  
; Sequence 86, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 86  
; LENGTH: 192  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
; FEATURE:  
; NAME/KEY: MISC\_FEATURE  
; LOCATION: (2)..(192)  
; OTHER INFORMATION: sequence is repeated N+2 times, where N is a positive  
whole number  
; FEATURE:  
; NAME/KEY: mat\_peptide  
; LOCATION: (1)..()  
US-10-621-693-86

Query Match 100.0%; Score 260; DB 12; Length 192;  
Best Local Similarity 100.0%; Pred. No. 6.2e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
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Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 12

US-10-714-067-23

; Sequence 23, Application US/10714067  
; Publication No. US20040077054A1  
; GENERAL INFORMATION:  
; APPLICANT: Weiner, Richard I.  
; APPLICANT: Martial, Joseph A.  
; APPLICANT: Struman, Ingrid  
; APPLICANT: Taylor, Robert  
; APPLICANT: Bentzien, Frauke  
; TITLE OF INVENTION: Novel Antiangiogenic Peptide Agents and Their  
; TITLE OF INVENTION: Therapeutic and Diagnostic Use  
; FILE REFERENCE: UCSF-018/02US  
; CURRENT APPLICATION NUMBER: US/10/714,067  
; CURRENT FILING DATE: 2003-11-14  
; PRIOR APPLICATION NUMBER: US/09/819,094  
; PRIOR FILING DATE: 2001-03-27  
; PRIOR APPLICATION NUMBER: 09/076,675  
; PRIOR FILING DATE: 1998-05-12  
; PRIOR APPLICATION NUMBER: 60/046,394  
; PRIOR FILING DATE: 1997-05-12  
; NUMBER OF SEQ ID NOS: 34  
; SEQ ID NO 23  
; LENGTH: 192  
; TYPE: PRT  
; ORGANISM: Homo sapiens  
US-10-714-067-23

Query Match 100.0%; Score 260; DB 16; Length 192;  
Best Local Similarity 100.0%; Pred. No. 6.2e-27;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
||||||||||||||||||||||||||||||||  
Db 1 MFPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

RESULT 13

US-10-621-693-42

; Sequence 42, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466

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; PRIOR FILING DATE: 2002-07-16
; NUMBER OF SEQ ID NOS: 86
; SOFTWARE: PatentIn version 3.0
; SEQ ID NO 42
; LENGTH: 193
; TYPE: PRT
; ORGANISM: Artificial
; FEATURE:
; OTHER INFORMATION: synthetic sequence
US-10-621-693-42
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RESULT 14  
US-10-621-693-72  
; Sequence 72, Application US/10621693  
; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 72  
; LENGTH: 206  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
US-10-621-693-72

RESULT 15  
US-10-621-693-51  
; Sequence 51, Application US/10621693

; Publication No. US20040059093A1  
; GENERAL INFORMATION:  
; APPLICANT: Gentide Biopharmaceuticals, Inc.  
; APPLICANT: Bussell, Stuart  
; TITLE OF INVENTION: METHODS TO CONSTRUCT MULTIMERIC DNA AND POLYMERIC PROTEIN  
SEQUENCES AS  
; TITLE OF INVENTION: DIRECT FUSIONS OR WITH LINKERS  
; FILE REFERENCE: GNT-00101.P.1-US  
; CURRENT APPLICATION NUMBER: US/10/621,693  
; CURRENT FILING DATE: 2003-07-16  
; PRIOR APPLICATION NUMBER: US 60/396,466  
; PRIOR FILING DATE: 2002-07-16  
; NUMBER OF SEQ ID NOS: 86  
; SOFTWARE: PatentIn version 3.0  
; SEQ ID NO 51  
; LENGTH: 391  
; TYPE: PRT  
; ORGANISM: Artificial  
; FEATURE:  
; OTHER INFORMATION: synthetic sequence  
; FEATURE:  
; NAME/KEY: mat\_peptide  
; LOCATION: (1)..()  
US-10-621-693-51

Query Match 100.0%; Score 260; DB 12; Length 391;  
Best Local Similarity 100.0%; Pred. No. 1.4e-26;  
Matches 49; Conservative 0; Mismatches 0; Indels 0; Gaps 0;  
  
Qy 1 MFPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
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Db 1 MFPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

Search completed: July 15, 2004, 17:05:06  
Job time : 27.3862 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:29:50 ; Search time 16.7295 Seconds  
(without alignments)  
924.141 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 1017041 seqs, 315518202 residues

Total number of hits satisfying chosen parameters: 1017041

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%  
Maximum Match 100%  
Listing first 45 summaries

Database : SPTREMBL\_25:  
1: sp\_archea:  
2: sp\_bacteria:  
3: sp\_fungi:  
4: sp\_human:  
5: sp\_invertebrate:  
6: sp\_mammal:  
7: sp\_mhc:  
8: sp\_organelle:  
9: sp\_phage:  
10: sp\_plant:  
11: sp\_rat:  
12: sp\_virus:  
13: sp\_vertebrate:  
14: sp\_unclassified:  
15: sp\_rvirus:  
16: sp\_bacterioplasm:  
17: sp\_archeap:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
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1	249	95.8	217	6	Q8WNE0	Q8wne0 atelles geof
2	228	87.7	245	4	O14644	O14644 homo sapien
3	215	82.7	184	6	Q866T9	Q866t9 pan troglod
4	213	81.9	212	6	Q07368	Q07368 macaca mula
5	213	81.9	217	6	Q07367	Q07367 macaca mula
6	205	78.8	217	6	Q866U1	Q866u1 pan troglod
7	201	77.3	217	6	Q07369	Q07369 macaca mula
8	201	77.3	217	6	Q866T8	Q866t8 pan troglod
9	197	75.8	217	4	Q14407	Q14407 homo sapien
10	195	75.0	217	6	Q8WND9	Q8wnd9 atelles geof
11	186	71.5	217	6	Q866U0	Q866u0 pan troglod
12	170	65.4	217	6	Q8MI74	Q8mi74 callithrix
13	160.5	61.7	216	11	O70615	O70615 spalax leuc
14	159.5	61.3	52	6	Q9TV91	Q9tv91 equus cabal
15	159.5	61.3	216	6	Q8MI73	Q8mi73 delphinus d
16	159.5	61.3	216	6	Q8HYE5	Q8hye5 ailuropoda
17	159.5	61.3	216	6	Q7YQB8	Q7yqb8 hippopotamu
18	155.5	59.8	216	6	Q7YRR6	Q7yrr6 camelus dro
19	155.5	59.8	216	11	Q9R2C3	Q9r2c3 mus musculu
20	154	59.2	216	11	Q9JKM4	Q9jkm4 cavia porce
21	152	58.5	178	6	Q95MJ5	Q95mj5 tarsius ban
22	149.5	57.5	204	6	Q95205	Q95205 ovis aries
23	147	56.5	202	4	O14643	O14643 homo sapien
24	146	56.2	178	6	Q95MJ6	Q95mj6 tarsius syr
25	144	55.4	190	11	Q9JKG0	Q9jkg0 cavia porce
26	143.5	55.2	192	6	Q9TU21	Q9tu21 capra hircu
27	142.5	54.8	192	6	Q9TQW9	Q9tqw9 bos indicus
28	142.5	54.8	217	6	Q7YQD2	Q7yqd2 giraffa cam
29	141	54.2	217	6	Q8MI75	Q8mi75 callithrix
30	140	53.8	216	13	Q804M1	Q804ml anser anser
31	139.5	53.7	217	6	Q864S7	Q864s7 bos mutus g
32	138.5	53.3	217	6	Q28957	Q28957 sus scrofa
33	138.5	53.3	217	6	Q9BEC0	Q9bec0 tragulus ja
34	138.5	53.3	217	6	Q9BEB9	Q9beb9 tragulus ja
35	137	52.7	40	6	Q9TRI9	Q9tri9 macropus ru
36	132	50.8	218	13	Q9PU72	Q9pu72 cynops pyrr
37	130	50.0	215	13	Q7ZU47	Q7zu47 rana catesb
38	128	49.2	195	13	Q91386	Q91386 amia calva
39	123.5	47.5	143	6	Q95240	Q95240 canis famil
40	122	46.9	199	4	Q14406	Q14406 homo sapien
41	122	46.9	217	13	Q7T1C3	Q7t1c3 ambystoma b
42	119	45.8	63	13	Q8QG85	Q8qg85 anser anser
43	107	41.2	53	6	O19034	O19034 ovis aries
44	104	40.0	55	6	O46474	O46474 felis silve
45	101	38.8	167	4	P78451	P78451 homo sapien

## ALIGNMENTS

### RESULT 1

#### Q8WNE0

ID Q8WNE0      PRELIMINARY;      PRT;      217 AA.  
 AC Q8WNE0;  
 DT 01-MAR-2002 (TrEMBLrel. 20, Created)  
 DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)

DE Growth hormone.  
GN GH-N.  
OS Ateles geoffroyi (Black-handed spider monkey).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.  
OX NCBI\_TaxID=9509;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.,  
RT "Independent duplication of the growth hormone gene in three  
RT Anthropoidean lineages.";  
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AF374234; AAL72286.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 24894 MW; 425829FF41EEAAE6 CRC64;

Query Match 95.8%; Score 249; DB 6; Length 217;  
Best Local Similarity 97.9%; Pred. No. 1.7e-25;  
Matches 47; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQ~~LA~~FDTYQEFEEAYIPKEQKYSFLQNP 49  
||| ||||| ||| ||||| ||| ||||| ||| ||||| ||| ||||| ||| ||||| ||| |||||  
Db 27 FPTIPLSRLLDNAMLRAHRLHQ~~LA~~FDTYQEFEEAYIPKEQKYSFLQNP 74

RESULT 2  
O14644  
ID O14644 PRELIMINARY; PRT; 245 AA.  
AC O14644;  
DT 01-JAN-1998 (TrEMBLrel. 05, Created)  
DT 01-JAN-1998 (TrEMBLrel. 05, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Placental growth hormone isoform hGH-V3 precursor.  
GN HGH-V.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Term placenta;  
RX MEDLINE=98373737; PubMed=9709963;  
RA Boguszewski C.L., Svensson P.A., Jansson T., Clark R.,  
RA Carlsson L.M.S., Carlsson B.;  
RT "Cloning of two novel growth hormone transcripts expressed in human  
RT placenta.";  
RL J. Clin. Endocrinol. Metab. 83:2878-2885(1998).  
DR EMBL; AF006061; AAB71829.1; -.  
DR HSSP; P01241; 1A22.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.

DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
KW Signal.  
FT SIGNAL 1 26 POTENTIAL.  
SQ SEQUENCE 245 AA; 27101 MW; 14CC7F8CD75D91C8 CRC64;  
  
Query Match 87.7%; Score 228; DB 4; Length 245;  
Best Local Similarity 91.7%; Pred. No. 1.3e-22;  
Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
|||:|||||:|||||:|||:||||:|||||:|||||:|||||:|||||:|||||  
Db 27 FPTIPLSRLFDNAMLARRLYQIAYDTYQEFEAYILKEQKYSFLQNP 74

RESULT 3

Q866T9

ID Q866T9 PRELIMINARY; PRT; 184 AA.  
AC Q866T9;  
DT 01-JUN-2003 (TrEMBLrel. 24, Created)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)  
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Placental lactogen PL-C (Fragment).  
OS Pan troglodytes (Chimpanzee).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.  
OX NCBI\_TaxID=9598;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D.E., Barrera H.S.;  
RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";  
RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AY146627; AAN84507.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
FT NON\_TER 184 184  
SQ SEQUENCE 184 AA; 21145 MW; 68D1FF4AE59178DD CRC64;

Query Match 82.7%; Score 215; DB 6; Length 184;  
Best Local Similarity 85.1%; Pred. No. 5.5e-21;  
Matches 40; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 48  
|||:|||||:|||:|||:|||:|||:|||:|||:|||:|||:|||:|||:  
Db 27 FPTIPLSRLFDHAMILQAHRAHQIADTYQEFEAYIPKDQKYSFLHD 73

RESULT 4

Q07368

ID Q07368 PRELIMINARY; PRT; 212 AA.  
AC Q07368;

DT 01-NOV-1996 (TrEMBLrel. 01, Created)  
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Somatotropin 2 precursor (Growth hormone 2) (Fragment).  
OS Macaca mulatta (Rhesus macaque).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
OC Cercopithecinae; Macaca.  
OX NCBI\_TaxID=9544;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Placenta;  
RX MEDLINE=94008724; PubMed=8404617;  
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;  
RT "Cloning of four growth hormone/chorionic somatomammotropin-related  
RT complementary deoxyribonucleic acids differentially expressed during  
RT pregnancy in the rhesus monkey placenta.";  
RL Endocrinology 133:1744-1752(1993).  
DR EMBL; L16553; AAA18840.1; -.  
DR PIR; I67408; I67408.  
DR HSSP; P01241; 1AXI.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
FT NON\_TER 1 1  
SQ SEQUENCE 212 AA; 24525 MW; 27BC91106256E6F5 CRC64;

Query Match 81.9%; Score 213; DB 6; Length 212;  
Best Local Similarity 78.7%; Pred. No. 1.2e-20;  
Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMLRRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
|:|||||||:||:|||||||||||||:|||:|||:  
Db 23 PSVPLSRLFDHAMIQAHRLHQQLAFDTYQEFEEAYIPKEKKHSILMENP 69

## RESULT 5

Q07367

ID Q07367 PRELIMINARY; PRT; 217 AA.  
AC Q07367;  
DT 01-NOV-1996 (TrEMBLrel. 01, Created)  
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Chorionic somatomammotropin-1.  
OS Macaca mulatta (Rhesus macaque).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
OC Cercopithecinae; Macaca.  
OX NCBI\_TaxID=9544;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Midpregnancy placenta;  
RX MEDLINE=94008724; PubMed=8404617;  
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;

RT "Cloning of four growth hormone/chorionic somatomammotropin-related  
RT complementary deoxyribonucleic acids differentially expressed during  
RT pregnancy in the rhesus monkey placenta.";  
RL Endocrinology 133:1744-1752(1993).  
DR EMBL; L16552; AAA18839.1; -.  
DR PIR; I53267; I53267.  
DR HSSP; P01241; 1AXI.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 24942 MW; FF5AA8915131F2BC CRC64;

Query Match 81.9%; Score 213; DB 6; Length 217;  
Best Local Similarity 78.7%; Pred. No. 1.2e-20;  
Matches 37; Conservative 9; Mismatches 1; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
|:|||||||:||:|||||||||||||:||| :|||  
Db 28 PSVPLSRLFDHAMIQAHRLHQQLAFDTYQEFEAYIPKEKKHSLMENP 74

## RESULT 6

### Q866U1

ID Q866U1 PRELIMINARY; PRT; 217 AA.  
AC Q866U1;  
DT 01-JUN-2003 (TrEMBLrel. 24, Created)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)  
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Placental lactogen PL-A.  
OS Pan troglodytes (Chimpanzee).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.  
OX NCBI\_TaxID=9598;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D.E., Barrera H.S.;  
RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";  
RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AY146625; AAN84505.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 25081 MW; C74B6262D8A93060 CRC64;

Query Match 78.8%; Score 205; DB 6; Length 217;  
Best Local Similarity 84.8%; Pred. No. 1.5e-19;  
Matches 39; Conservative 4; Mismatches 3; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
|:|||||||:|||:||| :||| ||||||||||| |||||||||||

Db 29 TVPLSRLFDHAMLQAHRAYQLAIDTYQEFEEAYILKEQKYSFLQNP 74

RESULT 7

Q07369

ID Q07369 PRELIMINARY; PRT; 217 AA.  
AC Q07369;  
DT 01-NOV-1996 (TrEMBLrel. 01, Created)  
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Chorionic somatomammotropin-3.  
OS Macaca mulatta (Rhesus macaque).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
OC Cercopithecinae; Macaca.  
OX NCBI\_TaxID=9544;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Midpregnancy placenta;  
RX MEDLINE=94008724; PubMed=8404617;  
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;  
RT "Cloning of four growth hormone/chorionic somatomammotropin-related  
RT complementary deoxyribonucleic acids differentially expressed during  
RT pregnancy in the rhesus monkey placenta.";  
RL Endocrinology 133:1744-1752(1993).  
DR EMBL; L16554; AAA18841.1; -.  
DR PIR; I67409; I67409.  
DR HSSP; P01241; 1AXI.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 24874 MW; F1EB6AFDBBA1B185 CRC64;

Query Match 77.3%; Score 201; DB 6; Length 217;  
Best Local Similarity 74.5%; Pred. No. 5.2e-19;  
Matches 35; Conservative 8; Mismatches 4; Indels 0; Gaps 0;

Qy 3 PTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49

!::||||||| !:|||||||||: |||||:|:| : ||

Db 28 PSVPLSRLFDNIMMQAHRLHQIQLAFDTYQEFEKTYIPKEKKHSLMGNP 74

RESULT 8

Q866T8

ID Q866T8 PRELIMINARY; PRT; 217 AA.  
AC Q866T8;  
DT 01-JUN-2003 (TrEMBLrel. 24, Created)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)  
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Placental lactogen PL-D.  
OS Pan troglodytes (Chimpanzee).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.

OX NCBI\_TaxID=9598;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D.E., Barrera H.S.;  
RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";  
RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AY146628; AAN84508.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 25135 MW; 1EB7B89B8A12E4F4 CRC64;

Query Match 77.3%; Score 201; DB 6; Length 217;  
Best Local Similarity 82.2%; Pred. No. 5.2e-19;  
Matches 37; Conservative 5; Mismatches 3; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQLAFTDYQEFEAYIPKEQKYSFLQN 48  
|:|||||||:|||:||| ||| |||||||:||||| :||||| :  
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEAYIPKDQKYSFLHD 73

RESULT 9  
Q14407  
ID Q14407 PRELIMINARY; PRT; 217 AA.  
AC Q14407;  
DT 01-NOV-1996 (TrEMBLrel. 01, Created)  
DT 01-NOV-1996 (TrEMBLrel. 01, Last sequence update)  
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Chorionic somatomammotropin CS-2 (Chorionic somatomammotropin hormone  
DE 2).  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=89307277; PubMed=2744760;  
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,  
RA Seeburg P.H.;  
RT "The human growth hormone locus: nucleotide sequence, biology, and  
RT evolution.";  
RL Genomics 4:479-497(1989).  
RN [2]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=91102558; PubMed=1980158;  
RA Vnencak-Jones C.L., Phillips J.A. III.;  
RT "Hot spots for growth hormone gene deletions in homologous regions  
RT outside of Alu repeats.";  
RL Science 250:1745-1748(1990).  
RN [3]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Placenta;  
RA Strausberg R.;

RL Submitted (JUL-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; J03071; AAA52553.1; -.  
DR EMBL; BC022044; AAH22044.1; -.  
DR EMBL; BC035965; AAH35965.1; -.  
DR PIR; E32435; E32435.  
DR HSSP; P01241; 1A22.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 24994 MW; 39FAACDDB6B2E951 CRC64;

Query Match 75.8%; Score 197; DB 4; Length 217;  
Best Local Similarity 80.0%; Pred. No. 1.8e-18;  
Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;  
  
Qy 4 TIPLSRLFDNAMLRAHRLHQIADFDTYQEFEAYIPKEQKYSFLQN 48  
|:|||||||:|||:||| ||||| ||||||| ||||:||||| :  
Db 29 TVPLSRLFDHAMLQAHRAHQIADTYQEFEETYIPKDQKYSFLHD 73

RESULT 10  
Q8WND9  
ID Q8WND9 PRELIMINARY; PRT; 217 AA.  
AC Q8WND9;  
DT 01-MAR-2002 (TrEMBLrel. 20, Created)  
DT 01-MAR-2002 (TrEMBLrel. 20, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Growth hormone.  
GN GH-V.  
OS Ateles geoffroyi (Black-handed spider monkey).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Atelinae; Ateles.  
OX NCBI\_TaxID=9509;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;  
RT "Independent duplication of the growth hormone gene in three  
RT Anthropoidean lineages.";  
RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AF374235; AAL72287.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 25293 MW; 741745A1B75C053E CRC64;

Query Match 75.0%; Score 195; DB 6; Length 217;  
Best Local Similarity 77.1%; Pred. No. 3.4e-18;  
Matches 37; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
SQ SEQUENCE 217 AA; 24884 MW; A1663257499827D4 CRC64;

Query Match 71.5%; Score 186; DB 6; Length 217;  
Best Local Similarity 77.8%; Pred. No. 5.6e-17;  
Matches 35; Conservative 4; Mismatches 6; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|:|||||| ||||:|| |||| |||||||||||:||||| :  
Db 29 TVPLSRLFKEAMLQAHPAHQLAIDTYQEFEAYIPKDQKYSFLHD 73

RESULT 12

Q8MI74

ID Q8MI74 PRELIMINARY; PRT; 217 AA.  
AC Q8MI74;  
DT 01-OCT-2002 (TrEMBLrel. 22, Created)  
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Growth hormone-like protein 6 precursor.  
GN GHLP6.  
OS Callithrix jacchus (Common marmoset).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae; Callithrix.  
OX NCBI\_TaxID=9483;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Wallis O.C., Wallis M.;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
|| ||||| :|||||:|||:|||||| || |||:||| ||:|||  
Db 27 FPRIPLSRLFGDAMLRAHQLHQVAFDTYQELEENCIPKKQKYFFLRNP 74

RESULT 11

Q866U0

ID Q866U0 PRELIMINARY; PRT; 217 AA.  
AC Q866U0;  
DT 01-JUN-2003 (TrEMBLrel. 24, Created)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last sequence update)  
DT 01-OCT-2003 (TrEMBLrel. 25, Last annotation update)  
DE Placental lactogen PL-B.  
OS Pan troglodytes (Chimpanzee).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.  
OX NCBI\_TaxID=9598;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Revol A., Esquivel D.E., Barrera H.S.;  
RT "The GH-PL locus a hot-point between human and chimpanzee genomes.";  
RL Submitted (AUG-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AY146626; AAN84506.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR TnterPro: TPR001400: Somatotropin.

RT "Characterisation of the GH gene cluster in a new-world monkey, the  
 RT marmoset (*Callithrix jacchus*).";  
 RL *J. Mol. Endocrinol.* 0:0-0(2002).  
 DR EMBL; AJ489811; CAD34012.1; -.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Signal.  
 FT SIGNAL 1 26 POTENTIAL.  
 FT CHAIN 27 217 GROWTH HORMONE-LIKE PROTEIN 6.  
 SQ SEQUENCE 217 AA; 25177 MW; 5ECF148798278F1A CRC64;  
  
 Query Match 65.4%; Score 170; DB 6; Length 217;  
 Best Local Similarity 68.1%; Pred. No. 8.2e-15;  
 Matches 32; Conservative 7; Mismatches 8; Indels 0; Gaps 0;  
  
 Qy 3 PTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
 | ||||| :||||| :|| || :||:|||: :|||||| ||:|||  
 Db 28 PRIPLSRLFGDAMLRARQLHHLAETYREFEKNCVPKEQKYFFLRNP 74

RESULT 13  
 O70615  
 ID O70615 PRELIMINARY; PRT; 216 AA.  
 AC O70615;  
 DT 01-AUG-1998 (TrEMBLrel. 07, Created)  
 DT 01-AUG-1998 (TrEMBLrel. 07, Last sequence update)  
 DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
 DE Growth hormone precursor.  
 OS *Spalax leucodon ehrenbergi* (Ehrenberg's mole rat).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Spalacinae;  
 OC Nannospalax.  
 OX NCBI\_TaxID=30637;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=99124645; PubMed=9924177;  
 RA Lioupis A., Nevo E., Wallis M.;  
 RT "Cloning and characterisation of the gene encoding mole rat (*Spalax ehrenbergi*) growth hormone.";  
 RL *J. Mol. Endocrinol.* 22:29-36(1999).  
 DR EMBL; AJ005819; CAA06716.1; -.  
 DR HSSP; P01241; 1AXI.  
 DR GO; GO:0005576; C:extracellular; IEA.  
 DR GO; GO:0005179; F:hormone activity; IEA.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Signal.  
 FT SIGNAL 1 26 POTENTIAL.  
 FT CHAIN 27 216 GROWTH HORMONE.  
 SQ SEQUENCE 216 AA; 24627 MW; EEAB8A523BA0ADFE CRC64;

Query Match 61.7%; Score 160.5; DB 11; Length 216;  
Best Local Similarity 68.1%; Pred. No. 1.6e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| |||:||| ||||: ||:|| :|||  
Db 27 FPAMPLSNLFANAVLRAQHLHQQLAADTYKEFERAYIPEGQRYS-IQN 72

RESULT 14

Q9TV91

ID Q9TV91 PRELIMINARY; PRT; 52 AA.  
AC Q9TV91;  
DT 01-MAY-2000 (TrEMBLrel. 13, Created)  
DT 01-MAY-2000 (TrEMBLrel. 13, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Growth hormone (Fragment).  
GN GH.  
OS Equus caballus (Horse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Perissodactyla; Equidae; Equus.  
OX NCBI\_TaxID=9796;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=99160468; PubMed=10051323;  
RA Caetano A.R., Pomp D., Murray J.D., Bowling A.T.;  
RT "Comparative mapping of 18 equine type I genes assigned by somatic  
cell hybrid analysis.";  
RL Mamm. Genome 10:271-276(1999).  
DR EMBL; AF097589; AAD25992.1; -.  
DR HSSP; P01241; 1HGU.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
FT NON\_TER 1 1  
FT NON\_TER 52 52  
SQ SEQUENCE 52 AA; 5835 MW; 20A9E9E9139F9BBA CRC64;

Query Match 61.3%; Score 159.5; DB 6; Length 52;  
Best Local Similarity 68.1%; Pred. No. 4.3e-14;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| |||:||| ||||: ||:|| :|||  
Db 6 FPAMPLSSLFANAVLRAQHLHQQLAADTYKEFERAYIPEGQRYS-IQN 51

RESULT 15

Q8MI73

ID Q8MI73 PRELIMINARY; PRT; 216 AA.  
AC Q8MI73;  
DT 01-OCT-2002 (TrEMBLrel. 22, Created)  
DT 01-OCT-2002 (TrEMBLrel. 22, Last sequence update)  
DT 01-JUN-2003 (TrEMBLrel. 24, Last annotation update)  
DE Growth hormone precursor.

GN GH.  
OS Delphinus delphis (Saddleback dolphin) (Black sea dolphin).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Odontoceti; Delphinidae;  
OC Delphinus.  
OX NCBI\_TaxID=9728;  
RN [1]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Liver;  
RA Maniou Z., Wallis O.C., Wallis M.;  
RT "Cloning and characterisation of the GH gene from the common dolphin  
(Delphinus delphis).";  
RL Submitted (JUN-2002) to the EMBL/GenBank/DDBJ databases.  
DR EMBL; AJ492191; CAD37292.1; -.  
DR GO; GO:0005576; C:extracellular; IEA.  
DR GO; GO:0005179; F:hormone activity; IEA.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
KW Signal.  
FT SIGNAL 1 26 POTENTIAL.  
FT CHAIN 27 216 GROWTH HORMONE.  
SQ SEQUENCE 216 AA; 24509 MW; 1EC467A84CCFEB02 CRC64;  
  
Query Match 61.3%; Score 159.5; DB 6; Length 216;  
Best Local Similarity 68.1%; Pred. No. 2.1e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
  
Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| ||||:||| ||||: ||:|| :||  
Db 27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72

Search completed: July 15, 2004, 16:40:47  
Job time : 17.8961 secs

GenCore version 5.1.6  
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OM protein - protein search, using sw model

Run on: July 15, 2004, 16:28:49 ; Search time 3.38246 Seconds  
(without alignments)  
754.314 Million cell updates/sec

Title: US-09-423-100-1

Perfect score: 260

Sequence: 1 MFPTIPLSRLFDNAMLRAHR.....QEFEAYIPKEQKYSFLQNP 49

Scoring table: BLOSUM62

Gapop 10.0 , Gapext 0.5

Searched: 141681 seqs, 52070155 residues

Total number of hits satisfying chosen parameters: 141681

Minimum DB seq length: 0

Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%

Maximum Match 100%

Listing first 45 summaries

Database : SwissProt\_42:\*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

#### SUMMARIES

Result No.	Score	Query Match	Length	DB	ID	Description
1	255	98.1	217	1	SOMA_HUMAN	P01241 homo sapien
2	255	98.1	217	1	SOMA_MACMU	P33093 macaca mula
3	255	98.1	217	1	SOMA_PANTR	P58756 pan troglod
4	249	95.8	217	1	SOMA_CALJA	Q9gmb3 callithrix
5	249	95.8	217	1	SOMA_SAIBB	P58343 saimiri bol
6	236	90.8	217	1	SOM2_PANTR	P58757 pan troglod
7	228	87.7	217	1	SOM2_HUMAN	P01242 homo sapien
8	199	76.5	217	1	SOM2_MACMU	Q07370 macaca mula
9	197	75.8	217	1	PLL_HUMAN	P01243 homo sapien
10	161.5	62.1	216	1	SOMA_MOUSE	P06880 mus musculu
11	160.5	61.7	190	1	SOMA_BALBO	P33092 balaenopter
12	159.5	61.3	190	1	SOMA_LOXAF	P20392 loxodonta a
13	159.5	61.3	190	1	SOMA_VULVU	P10766 vulpes vulp
14	159.5	61.3	216	1	SOMA_CANFA	P33711 canis famil
15	159.5	61.3	216	1	SOMA_FELCA	P46404 felis silve
16	159.5	61.3	216	1	SOMA_HORSE	P01245 equus cabal
17	159.5	61.3	216	1	SOMA_MESAU	P37886 mesocricetu

18	159.5	61.3	216	1	SOMA_PIG	P01248 sus scrofa
19	159.5	61.3	216	1	SOMA_RABBIT	P46407 oryctolagus
20	159.5	61.3	216	1	SOMA_RAT	P01244 rattus norv
21	159.5	61.3	217	1	SOMA_GALSE	Q9gka1 galago sene
22	159.5	61.3	217	1	SOMA_NYCPY	Q9gmb2 nycticebus
23	156.5	60.2	216	1	SOMA_MUSVI	P19795 mustela vis
24	155.5	59.8	190	1	SOMA_LAMPA	P37885 lama guanic
25	150	57.7	216	1	SOMA_MELGA	P22077 meleagris g
26	148	56.9	191	1	SOMA_CHEMY	P34005 chelonia my
27	145	55.8	215	1	SOMA_MONDO	Q9gl60 monodelphis
28	145	55.8	215	1	SOMA_TRIVU	O62754 trichosurus
29	144	55.4	190	1	SOM1_ACIGU	P26773 acipenser g
30	144	55.4	190	1	SOM2_ACIGU	P26774 acipenser g
31	144	55.4	216	1	SOMA_CHICK	P08998 gallus gall
32	142.5	54.8	217	1	SOMA_BOVIN	P01246 bos taurus
33	142.5	54.8	217	1	SOMA_CEREL	P56437 cervus elap
34	142.5	54.8	217	1	SOMA_SHEEP	P01247 ovis aries
35	142	54.6	217	1	SOMA_STRCA	Q9pwg3 struthio ca
36	140	53.8	190	1	SOMA_CRONO	P55755 crocodylus
37	140	53.8	216	1	SOMA_ANAPL	P11228 anas platyr
38	135.5	52.1	217	1	SOMA_BUBBU	O18938 bubalus bub
39	132	50.8	215	1	SOMA_RANCA	P10813 rana catesb
40	125	48.1	211	1	SOMA_LEPOS	P79885 lepisosteus
41	122	46.9	214	1	SOMA_XENLA	P12855 xenopus lae
42	116	44.6	183	1	SOMA_PRIGL	P34006 prionace gl
43	112	43.1	206	1	SOMA_PROAN	O73848 protopterus
44	111	42.7	213	1	SOMA_BUFGMA	O73849 bufo marinu
45	104	40.0	208	1	SOMB_XENLA	P12856 xenopus lae

#### ALIGNMENTS

RESULT 1

SOMA\_HUMAN

ID SOMA\_HUMAN STANDARD; PRT; 217 AA.

AC P01241; Q14405; Q16631; Q9HBZ1; Q9UMJ7; Q9UNL5;

DT 21-JUL-1986 (Rel. 01, Created)

DT 01-MAR-1992 (Rel. 21, Last sequence update)

DT 10-OCT-2003 (Rel. 42, Last annotation update)

DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth hormone) (Growth hormone 1).

DE GH1.

GN

OS Homo sapiens (Human).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

OX NCBI\_TaxID=9606;

RN [1]

RP SEQUENCE FROM N.A. (ISOFORM 1).

RX MEDLINE=80034477; PubMed=386281;

RA Roskam W., Rougeon F.;

RT "Molecular cloning and nucleotide sequence of the human growth hormone structural gene.";

RL Nucleic Acids Res. 7:305-320(1979).

RN [2]

RP SEQUENCE FROM N.A. (ISOFORM 1).

RX MEDLINE=79203293; PubMed=377496;

RA Martial J.A., Hallewell R.A., Baxter J.D., Goodman H.M.;  
RT "Human growth hormone: complementary DNA cloning and expression in  
RT bacteria.";  
RL Science 205:602-607(1979).  
RN [3]  
RP SEQUENCE FROM N.A. (ISOFORM 1), AND POSSIBLE ALTERNATIVE SPLICING.  
RX MEDLINE=82014939; PubMed=6269091;  
RA Denoto F.M., Moore D.D., Goodman H.M.;  
RT "Human growth hormone DNA sequence and mRNA structure: possible  
RT alternative splicing.";  
RL Nucleic Acids Res. 9:3719-3730(1981).  
RN [4]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=83182010; PubMed=7169009;  
RA Seeburg P.H.;  
RT "The human growth hormone gene family: nucleotide sequences show  
RT recent divergence and predict a new polypeptide hormone.";  
RL DNA 1:239-249(1982).  
RN [5]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=89307277; PubMed=2744760;  
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,  
RA Gelinas R.E., Seeburg P.H.;  
RT "The human growth hormone locus: nucleotide sequence, biology, and  
RT evolution.";  
RL Genomics 4:479-497(1989).  
RN [6]  
RP SEQUENCE FROM N.A. (ISOFORM 3).  
RC TISSUE=Pituitary;  
RA Gu J., Huang Q.-H., Li N., Xu S.-H., Han Z.-G., Fu G., Chen Z.;  
RT "A novel gene expressed in human pituitary.";  
RL Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.  
RN [7]  
RP SEQUENCE FROM N.A. (ISOFORM 4).  
RC TISSUE=Pituitary;  
RX MEDLINE=20402571; PubMed=10931946;  
RA Hu R.-M., Han Z.-G., Song H.-D., Peng Y.-D., Huang Q.-H., Ren S.-X.,  
RA Gu Y.-J., Huang C.-H., Li Y.-B., Jiang C.-L., Fu G., Zhang Q.-H.,  
RA Gu B.-W., Dai M., Mao Y.-F., Gao G.-F., Rong R., Ye M., Zhou J.,  
RA Xu S.-H., Gu J., Shi J.-X., Jin W.-R., Zhang C.-K., Wu T.-M.,  
RA Huang G.-Y., Chen Z., Chen M.-D., Chen J.-L.;  
RT "Gene expression profiling in the human hypothalamus-pituitary-adrenal  
RT axis and full-length cDNA cloning.";  
RL Proc. Natl. Acad. Sci. U.S.A. 97:9543-9548(2000).  
RN [8]  
RP SEQUENCE OF 1-26 FROM N.A.  
RX MEDLINE=86137393; PubMed=3912261;  
RA Gray G.L., Baldridge J.S., McKeown K.S., Heyneker H.L., Chang C.N.;  
RT "Periplasmic production of correctly processed human growth hormone in  
RT Escherichia coli: natural and bacterial signal sequences are  
RT interchangeable.";  
RL Gene 39:247-254(1985).  
RN [9]  
RP SEQUENCE OF 27-217.  
RX MEDLINE=69289202; PubMed=5810834;  
RA Li C.H., Dixon J.S., Liu W.-K.;  
RT "Human pituitary growth hormone. XIX. The primary structure of the

RT hormone.";  
RL Arch. Biochem. Biophys. 133:70-91(1969).  
RN [10]  
RP SEQUENCE OF 27-217, AND REVISIONS.  
RX MEDLINE=72143935; PubMed=5144027;  
RA Li C.H., Dixon J.S.;  
RT "Human pituitary growth hormone. 32. The primary structure of the  
hormone: revision.";  
RL Arch. Biochem. Biophys. 146:233-236(1971).  
RN [11]  
RP REVISION.  
RX MEDLINE=73092028; PubMed=4675454;  
RA Bewley T.A., Dixon J.S., Li C.H.;  
RT "Sequence comparison of human pituitary growth hormone, human  
chorionic somatomammotropin, and ovine pituitary growth and  
lactogenic hormones.";  
RL Int. J. Pept. Protein Res. 4:281-287(1972).  
RN [12]  
RP SEQUENCE OF 27-61 AND 102-124.  
RX MEDLINE=71139765; PubMed=5279046;  
RA Niall H.D.;  
RT "Revised primary structure for human growth hormone.";  
RL Nature New Biol. 230:90-91(1971).  
RN [13]  
RP REVISIONS TO 119-120 AND 157-159.  
RX MEDLINE=71153968; PubMed=5279528;  
RA Niall H.D., Hogan M.L., Sauer R., Rosenblum I.Y., Greenwood F.C.;  
RT "Sequences of pituitary and placental lactogenic and growth hormones:  
evolution from a primordial peptide by gene reduplication.";  
RL Proc. Natl. Acad. Sci. U.S.A. 68:866-869(1971).  
RN [14]  
RP REVISION.  
RA Niall H.D.;  
RT "The chemistry of the human lactogenic hormones.";  
RL (In) Griffiths K. (eds.);  
RL Prolactin and carcinogenesis, Proc. fourth tenovus workshop prolactin,  
RL pp.13-20, Alpha Omega Alpha Press, Cardiff (1972).  
RN [15]  
RP SEQUENCE OF 27-79 (ISOFORM 2).  
RX MEDLINE=81117361; PubMed=7462247;  
RA Chapman G.E., Rogers K.M., Brittain T., Bradshaw R.A., Bates O.J.,  
RA Turner C., Cary P.D., Crane-Robinson C.;  
RT "The 20,000 molecular weight variant of human growth hormone.  
Preparation and some physical and chemical properties.";  
RL J. Biol. Chem. 256:2395-2401(1981).  
RN [16]  
RP SEQUENCE OF 46-80 (ISOFORM 2).  
RX MEDLINE=80130196; PubMed=7356479;  
RA Lewis U.J., Bonewald L.F., Lewis L.J.;  
RT "The 20,000-dalton variant of human growth hormone: location of the  
amino acid deletions.";  
RL Biochem. Biophys. Res. Commun. 92:511-516(1980).  
RN [17]  
RP DEAMIDATION OF GLN-163 AND ASN-178.  
RX MEDLINE=82052997; PubMed=7028740;  
RA Lewis U.J., Singh R.N., Bonewald L.F., Seavey B.K.;  
RT "Altered proteolytic cleavage of human growth hormone as a result of

RT deamidation.";  
RL J. Biol. Chem. 256:11645-11650(1981).  
RN [18]  
RP REVIEW.  
RX MEDLINE=99321812; PubMed=10393484;  
RA Baumann G.;  
RT "Growth hormone heterogeneity in human pituitary and plasma.";  
RL Horm. Res. 51 Suppl. 1:2-6(1999).  
RN [19]  
RP 3D-STRUCTURE MODELING.  
RX MEDLINE=88190073; PubMed=3447173;  
RA Cohen F.E., Kuntz I.D.;  
RT "Prediction of the three-dimensional structure of human growth  
hormone.";  
RL Proteins 2:162-166(1987).  
RN [20]  
RP X-RAY CRYSTALLOGRAPHY (2.8 ANGSTROMS).  
RX MEDLINE=92196577; PubMed=1549776;  
RA de Vos A.M., Ultsch M., Kossiakoff A.A.;  
RT "Human growth hormone and extracellular domain of its receptor:  
crystal structure of the complex.";  
RL Science 255:306-312(1992).  
RN [21]  
RP X-RAY CRYSTALLOGRAPHY (2.9 ANGSTROMS).  
RX MEDLINE=95075462; PubMed=7984244;  
RA Somers W., Ultsch M., de Vos A.M., Kossiakoff A.A.;  
RT "The X-ray structure of a growth hormone-prolactin receptor complex.";  
RL Nature 372:478-481(1994).  
RN [22]  
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).  
RA Chantalat L., Chirgadze N.Y., Jones N., Korber F., Navaza J.,  
RA Pavlovsk A.G., Wlodawer A.;  
RT "The crystal-structure of wild-type growth-hormone at 2.5-A  
resolution.";  
RL Protein Pept. Lett. 2:333-340(1995).  
RN [23]  
RP X-RAY CRYSTALLOGRAPHY (2.5 ANGSTROMS).  
RX MEDLINE=97113023; PubMed=8943276;  
RA Sundstroem M., Lundqvist T., Roedin J., Giebel L.B., Milligan D.,  
RA Norstedt G.;  
RT "Crystal structure of an antagonist mutant of human growth hormone,  
G120R, in complex with its receptor at 2.9-A resolution.";  
RL J. Biol. Chem. 271:32197-32203(1996).  
RN [24]  
RP VARIANT KOWARSKI SYNDROME CYS-103.  
RX MEDLINE=96150232; PubMed=8552145;  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RT "Short stature caused by a mutant growth hormone.";  
RL New Engl. J. Med. 334:432-436(1996).  
RN [25]  
RP ERRATUM.  
RA Takahashi Y., Kaji H., Okimura Y., Goji K., Abe H., Chihara K.;  
RL New Engl. J. Med. 334:1207-1207(1996).  
RN [26]  
RP VARIANT KOWARSKI SYNDROME GLY-138.  
RX MEDLINE=97426478; PubMed=9276733;  
RA Takahashi Y., Shirono H., Arisaka O., Takahashi K., Yagi T., Koga J.,

RA Kaji H., Okimura Y., Abe H., Tanaka T., Chihara K.;  
RT "Biologically inactive growth hormone caused by an amino acid  
RT substitution.";  
RL J. Clin. Invest. 100:1159-1165(1997).  
RN [27]  
RP VARIANT CYS-105.  
RX MEDLINE=99318093; PubMed=10391209;

Query Match 98.1%; Score 255; DB 1; Length 217;  
Best Local Similarity 100.0%; Pred. No. 5.6e-25;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
Db 27 FPTIPLSRLFDNAMLRRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 2  
SOMA\_MACMU  
ID SOMA\_MACMU STANDARD; PRT; 217 AA.  
AC P33093;  
DT 01-OCT-1993 (Rel. 27, Created)  
DT 01-OCT-1994 (Rel. 30, Last sequence update)  
DT 28-FEB-2003 (Rel. 41, Last annotation update)  
DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth  
DE hormone) (Growth hormone 1).  
GN GH1.  
OS Macaca mulatta (Rhesus macaque).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
OC Cercopithecinae; Macaca.  
OX NCBI\_TaxID=9544;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=94008724; PubMed=8404617;  
RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;  
RT "Cloning of four growth hormone/chorionic somatomammotropin-related  
RT complementary deoxyribonucleic acids differentially expressed during  
RT pregnancy in the rhesus monkey placenta.";  
RL Endocrinology 133:1744-1752(1993).  
RN [2]  
RP SEQUENCE OF 27-217.  
RX MEDLINE=86129460; PubMed=3080959;  
RA Li C.H., Chung D., Lahm H.W., Stein S.;  
RT "The primary structure of monkey pituitary growth hormone.";  
RL Arch. Biochem. Biophys. 245:287-291(1986).  
CC -!- FUNCTION: Plays an important role in growth control. Its major  
CC role in stimulating body growth is to stimulate the liver and  
CC other tissues to secrete IGF-1. It stimulates both the  
CC differentiation and proliferation of myoblasts. It also stimulates  
CC amino acid uptake and protein synthesis in muscle and other  
CC tissues.  
CC -!- SUBCELLULAR LOCATION: Secreted.  
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
CC -----  
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CC -----

DR EMBL; L16556; AAA18842.1; -.

DR PIR; I67410; I67410.

DR HSPP; P01241; 1AXI.

DR InterPro; IPR001400; Somatotropin.

DR Pfam; PF00103; hormone; 1.

DR PRINTS; PR00836; SOMATOTROPIN.

DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.

DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.

KW Hormone; Pituitary; Signal.

FT SIGNAL 1 26

FT CHAIN 27 217 SOMATOTROPIN.

FT DISULFID 79 191 BY SIMILARITY.

FT DISULFID 208 215 BY SIMILARITY.

FT CONFLICT 100 100 E -> Q (IN REF. 2).

FT CONFLICT 179 179 N -> D (IN REF. 2).

SQ SEQUENCE 217 AA; 24913 MW; 2C5180341EEC46D0 CRC64;

Query Match 98.1%; Score 255; DB 1; Length 217;  
Best Local Similarity 100.0%; Pred. No. 5.6e-25;  
Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49

||||||||||||||||||||||||||||||||||||||||||||||||||||

Db 27 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 3

SOMA\_PANTR

ID SOMA\_PANTR STANDARD; PRT; 217 AA.

AC P58756;

DT 28-FEB-2003 (Rel. 41, Created)

DT 28-FEB-2003 (Rel. 41, Last sequence update)

DT 28-FEB-2003 (Rel. 41, Last annotation update)

DE Somatotropin precursor (Growth hormone) (GH) (GH-N) (Pituitary growth  
DE hormone) (Growth hormone 1).

GN GH1.

OS Pan troglodytes (Chimpanzee).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.

OX NCBI\_TaxID=9598;

RN [1]

RP SEQUENCE FROM N.A.

RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;

RT "Independent duplication of the growth hormone gene in three

RT Anthropoidean lineages.";

RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.

CC -!- FUNCTION: Plays an important role in growth control. Its major

CC role in stimulating body growth is to stimulate the liver and

CC other tissues to secrete IGF-1. It stimulates both the

CC differentiation and proliferation of myoblasts. It also stimulates

CC amino acid uptake and protein synthesis in muscle and other

CC tissues (By similarity).

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

CC

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CC

DR EMBL; AF374232; AAL72284.1; -.

DR InterPro; IPR001400; Somatotropin.

DR Pfam; PF00103; hormone; 1.

DR PRINTS; PR00836; SOMATOTROPIN.

DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.

DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.

KW Hormone; Pituitary; Signal.

FT SIGNAL 1 26 BY SIMILARITY.

FT CHAIN 27 217 SOMATOTROPIN.

FT DISULFID 79 191 BY SIMILARITY.

FT DISULFID 208 215 BY SIMILARITY.

SQ SEQUENCE 217 AA; 24843 MW; FEA295EDE0518674 CRC64;

Query Match 98.1%; Score 255; DB 1; Length 217;

Best Local Similarity 100.0%; Pred. No. 5.6e-25;

Matches 48; Conservative 0; Mismatches 0; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 49

Db 27 FPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 4  
SOMA\_CALJA  
ID SOMA\_CALJA STANDARD; PRT; 217 AA.  
AC Q9GMB3;  
DT 28-FEB-2003 (Rel. 41, Created)  
DT 28-FEB-2003 (Rel. 41, Last sequence update)  
DT 28-FEB-2003 (Rel. 41, Last annotation update)  
DE Somatotropin precursor (Growth hormone).  
GN GH1.  
OS Callithrix jacchus (Common marmoset).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Platyrrhini; Callitrichidae;  
OC Callithrix.  
OX NCBI\_TaxID=9483;  
RN [1]  
RP SEQUENCE FROM N.A.  
RA Wallis O.C., Wallis M.;  
RT "Cloning and characterisation of a putative growth hormone encoding  
RT gene from the marmoset (Callithrix jacchus).";  
RL Submitted (AUG-2000) to the EMBL/GenBank/DBJ databases.  
CC -!- FUNCTION: Plays an important role in growth control. Its major  
CC role in stimulating body growth is to stimulate the liver and  
CC other tissues to secrete IGF-1. It stimulates both the

CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 CC -----  
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 CC -----  
 DR EMBL; AJ297563; CAC03481.1; -.  
 DR HSSP; P01241; 1A22.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary; Signal.  
 FT SIGNAL 1 26 BY SIMILARITY.  
 FT CHAIN 27 217 SOMATOTROPIN.  
 FT DISULFID 79 191 BY SIMILARITY.  
 FT DISULFID 208 215 BY SIMILARITY.  
 SQ SEQUENCE 217 AA; 24959 MW; E102151A12CE6192 CRC64;  
  
 Query Match 95.8%; Score 249; DB 1; Length 217;  
 Best Local Similarity 97.9%; Pred. No. 3.2e-24;  
 Matches 47; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
 QY 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
 ||||||| ||||||| ||||||| ||||||| ||||||| |||||||  
 Db 27 FPTIPLSRLLDNAMLRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 5  
 SOMA\_SAIBB  
 ID SOMA\_SAIBB STANDARD; PRT; 217 AA.  
 AC P58343;  
 DT 28-FEB-2003 (Rel. 41, Created)  
 DT 28-FEB-2003 (Rel. 41, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin precursor (Growth hormone).  
 GN GH1.  
 OS Saimiri boliviensis boliviensis (Bolivian squirrel monkey).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Platyrrhini; Cebidae; Cebinae; Saimiri.  
 OX NCBI\_TaxID=39432;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RX MEDLINE=21265430; PubMed=11371582;  
 RA Liu J.C., Makova K.D., Adkins R.M., Gibson S., Li W.H.;  
 RT "Episodic evolution of growth hormone in primates and emergence of the  
 RT species specificity of human growth hormone receptor.";  
 RL Mol. Biol. Evol. 18:945-953(2001).

CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues (By similarity).  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 CC -----  
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 CC -----  
 DR EMBL; AF339060; AAK62287.1; -.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary; Signal.  
 FT SIGNAL 1 26 BY SIMILARITY.  
 FT CHAIN 27 217 SOMATOTROPIN.  
 FT DISULFID 79 191 BY SIMILARITY.  
 FT DISULFID 208 215 BY SIMILARITY.  
 SQ SEQUENCE 217 AA; 24864 MW; 9515289992C529F7 CRC64;  
  
 Query Match 95.8%; Score 249; DB 1; Length 217;  
 Best Local Similarity 97.9%; Pred. No. 3.2e-24;  
 Matches 47; Conservative 0; Mismatches 1; Indels 0; Gaps 0;  
  
 Qy 2 FPTIPLSRLFDNAMILRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
 ||||||| ||||||| ||||||| ||||||| ||||||| |||||||  
 Db 27 FPTIPLSRLLDNAMILRAHRLHQLAFDTYQEFEAYIPKEQKYSFLQNP 74

RESULT 6  
 SOM2\_PANTR  
 ID SOM2\_PANTR STANDARD; PRT; 217 AA.  
 AC P58757;  
 DT 28-FEB-2003 (Rel. 41, Created)  
 DT 28-FEB-2003 (Rel. 41, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Growth hormone variant precursor (GH-V) (Placenta-specific growth  
 DE hormone) (Growth hormone 2).  
 GN GH2.  
 OS Pan troglodytes (Chimpanzee).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Pan.  
 OX NCBI\_TaxID=9598;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Revol A., Esquivel D., Santiago D., Barrera-Saldana H.;  
 RT "Independent duplication of the growth hormone gene in three

RT Anthropoidean lineages.";  
 RL Submitted (APR-2001) to the EMBL/GenBank/DDBJ databases.  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- TISSUE SPECIFICITY: Expressed in the placenta.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 CC -----  
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 CC -----  
 DR EMBL; AF374233; AAL72285.1; -.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Placenta; Signal; Glycoprotein.  
 FT SIGNAL 1 26 BY SIMILARITY.  
 FT CHAIN 27 217 GROWTH HORMONE VARIANT.  
 FT DISULFID 79 191 BY SIMILARITY.  
 FT DISULFID 208 215 BY SIMILARITY.  
 SQ SEQUENCE 217 AA; 24990 MW; 1592A429075677DE CRC64;

Query Match 90.8%; Score 236; DB 1; Length 217;  
 Best Local Similarity 93.8%; Pred. No. 1.4e-22;  
 Matches 45; Conservative 2; Mismatches 1; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
 |||||||:|||||:|||||:||||:|||||:|||||:|||||:|||||:  
 Db 27 FPTIPLSRLFDNAMLRAHRLYQLAYDTYQEFEAYILKEQKYSFLQNP 74

RESULT 7  
 SOM2\_HUMAN  
 ID SOM2\_HUMAN STANDARD; PRT; 217 AA.  
 AC P01242; P09587;  
 DT 21-JUL-1986 (Rel. 01, Created)  
 DT 28-FEB-2003 (Rel. 41, Last sequence update)  
 DT 10-OCT-2003 (Rel. 42, Last annotation update)  
 DE Growth hormone variant precursor (GH-V) (Placenta-specific growth  
 DE hormone) (Growth hormone 2).  
 GN GH2.  
 OS Homo sapiens (Human).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
 OX NCBI\_TaxID=9606;  
 RN [1]

RP SEQUENCE FROM N.A. (ISOFORM 1).  
RX MEDLINE=83182010; PubMed=7169009;  
RA Seeburg P.H.;  
RT "The human growth hormone gene family: nucleotide sequences show recent divergence and predict a new polypeptide hormone.";  
RL DNA 1:239-249(1982).  
RN [2]  
RP SEQUENCE FROM N.A. (ISOFORMS 1 AND 2).  
RX MEDLINE=88243769; PubMed=3379057;  
RA Cooke N.E., Ray J., Emery J.G., Liebhaber S.A.;  
RT "Two distinct species of human growth hormone-variant mRNA in the human placenta predict the expression of novel growth hormone proteins.";  
RL J. Biol. Chem. 263:9001-9006(1988).  
RN [3]  
RP SEQUENCE FROM N.A. (ISOFORM 1).  
RX MEDLINE=89024984; PubMed=2460050;  
RA Igout A., Scippo M.L., Frankenmeier F., Hennen G.;  
RT "Cloning and nucleotide sequence of placental hGH-V cDNA.";  
RL Arch. Int. Physiol. Biochim. 96:63-67(1988).  
RN [4]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=89307277; PubMed=2744760;  
RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A.,  
RA Gelinas R.E., Seeburg P.H.;  
RT "The human growth hormone locus: nucleotide sequence, biology, and evolution.";  
RL Genomics 4:479-497(1989).  
RN [5]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Placenta;  
RX MEDLINE=22388257; PubMed=12477932;  
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,  
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
RA Schnurch A., Schein J.E., Jones S.J.M., Marra M.A.;  
RT "Generation and initial analysis of more than 15,000 full-length human and mouse cDNA sequences.";  
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).  
RN [6]  
RP REVIEW.  
RX MEDLINE=99321812; PubMed=10393484;  
RA Baumann G.;  
RT "Growth hormone heterogeneity in human pituitary and plasma.";

RL Horm. Res. 51 Suppl. 1:2-6(1999).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBUNIT: Monomer, dimer, trimer, tetramer and pentamer, disulfide-  
 CC linked or non-covalently associated, in homopolymeric and  
 CC heteropolymeric combinations. Can also form a complex either with  
 CC GHBP or with the alpha2-macroglobulin complex.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- ALTERNATIVE PRODUCTS:  
 CC Event=Alternative splicing; Named isoforms=2;  
 CC Name=1; Synonyms=GH-V1;  
 CC IsoId=P01242-1; Sequence=Displayed;  
 CC Name=2; Synonyms=GH-V2;  
 CC IsoId=P01242-2; Sequence=VSP\_006203;  
 CC Note=No experimental confirmation available;  
 CC -!- TISSUE SPECIFICITY: Expressed in the placenta.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 CC -----  
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 CC -----  
 DR EMBL; K00470; AAA98619.1; -.  
 DR EMBL; J03756; AAB59547.1; -.  
 DR EMBL; J03756; AAB59548.1; -.  
 DR EMBL; M38451; AAA35891.1; -.  
 DR EMBL; J03071; AAA52552.1; -.  
 DR EMBL; BC020760; AAH20760.1; -.  
 DR PIR; A28072; STHUV2.  
 DR PIR; D32435; STHUV.  
 DR HSSP; P01241; 1A22.  
 DR Genew; HGNC:4262; GH2.  
 DR MIM; 139240; -.  
 DR GO; GO:0005180; F:peptide hormone; TAS.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Placenta; Signal; Glycoprotein; Alternative splicing;  
 KW Polymorphism.  
 FT SIGNAL 1 26  
 FT CHAIN 27 217 GROWTH HORMONE VARIANT.  
 FT DISULFID 79 191 BY SIMILARITY.  
 FT DISULFID 208 215 BY SIMILARITY.  
 FT CARBOHYD 166 166 N-LINKED (GLCNAC. . .) (POTENTIAL).  
 FT VARSPLIC 153 217 RLEDGSVRTGQIFNQSYSKFDTKSHNDDALLKNYGLLYCFR  
 FT KDMDKVETFLRIVQCRSVEGSCGF -> VRVAPGIPNPGAP  
 FT LASRDWGEKHCCPLFSSQALTQENSPYSSFPLVNPPGLSLQ

FT PGGEGGKWMNERGREQCPASAWPLLFLHFAEAGRWQPPDWA  
 FT DLQSVLQQV (in isoform 2).  
 FT /FTId=VSP\_006203.  
 FT VARIANT 90 90 R -> W (in dbSNP:5389).  
 FT /FTId=VAR\_014591.  
 FT CONFLICT 109 109 I -> T (IN REF. 2).  
 SQ SEQUENCE 217 AA; 24999 MW; 7B9324698E822F96 CRC64;  
  
 Query Match 87.7%; Score 228; DB 1; Length 217;  
 Best Local Similarity 91.7%; Pred. No. 1.4e-21;  
 Matches 44; Conservative 2; Mismatches 2; Indels 0; Gaps 0;  
  
 Qy 2 FPTIPLSRLFDNAMLRAHRLHQLAFDTYQEFEEAYIPKEQKYSFLQNP 49  
 |||||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:|||||:  
 Db 27 FPTIPLSRLFDNAMLARRLYQAYDTYQEFEEAYILKEQKYSFLQNP 74

RESULT 8  
 SOM2\_MACMU  
 ID SOM2\_MACMU STANDARD; PRT; 217 AA.  
 AC Q07370; Q28494;  
 DT 01-NOV-1997 (Rel. 35, Created)  
 DT 01-NOV-1997 (Rel. 35, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Growth hormone variant precursor (GH-V) (Placenta-specific growth  
 DE hormone) (Growth hormone 2).  
 GN GH2.  
 OS Macaca mulatta (Rhesus macaque).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;  
 OC Cercopithecinae; Macaca.  
 OX NCBI\_TaxID=9544;  
 RN [1]  
 RP SEQUENCE FROM N.A.  
 RA Golos T.G.;  
 RL Submitted (JAN-1994) to the EMBL/GenBank/DDBJ databases.  
 RN [2]  
 RP SEQUENCE FROM N.A.  
 RC TISSUE=Placenta;  
 RX MEDLINE=94008724; PubMed=8404617;  
 RA Golos T.G., Durning M., Fisher J.M., Fowler P.D.;  
 RT "Cloning of four growth hormone/chorionic somatomammotropin-related  
 RT complementary deoxyribonucleic acids differentially expressed during  
 RT pregnancy in the rhesus monkey placenta.";  
 RL Endocrinology 133:1744-1752(1993).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted (By similarity).  
 CC -!- TISSUE SPECIFICITY: Expressed in the placenta.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 CC -----  
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CC -----  
DR EMBL; U02293; AAA03391.1; -.  
DR EMBL; L16555; AAA20180.1; -.  
DR PIR; I67411; I67411.  
DR HSSP; P01241; 1HGU.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Placenta; Signal; Glycoprotein.  
FT SIGNAL 1 26 BY SIMILARITY.  
FT CHAIN 27 217 GROWTH HORMONE VARIANT.  
FT DISULFID 79 191 BY SIMILARITY.  
FT DISULFID 208 215 BY SIMILARITY.  
FT CONFLICT 57 57 L -> F (IN REF. 2).  
FT CONFLICT 152 152 E -> G (IN REF. 2).  
SQ SEQUENCE 217 AA; 25221 MW; 8DB116CBC24EA090 CRC64;

Query Match 76.58; Score 199; DB 1; Length 217;  
Best Local Similarity 77.1%; Pred. No. 6.3e-18;  
Matches 37; Conservative 5; Mismatches 6; Indels 0; Gaps 0;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQNP 49  
||||||| ||: |: ||| ||:||||| : |||||||||||||:|||  
Db 27 FPTIPLSWLFNTAVFRAHHLHKLAFDTYPKLEEAYIPKEQKYSFLRNP 74

## RESULT 9

### PLL\_HUMAN

ID PLL\_HUMAN STANDARD; PRT; 217 AA.  
AC P01243;  
DT 21-JUL-1986 (Rel. 01, Created)  
DT 01-APR-1988 (Rel. 07, Last sequence update)  
DT 15-MAR-2004 (Rel. 43, Last annotation update)  
DE Lactogen precursor (Choriomammotropin) (Chorionic somatomammotropin).  
GN CSH1 AND CSH2.  
OS Homo sapiens (Human).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.  
OX NCBI\_TaxID=9606;  
RN [1]  
RP SEQUENCE FROM N.A. (GENE CSH1).  
RX MEDLINE=85030426; PubMed=6208192;  
RA Selby M.J., Barta A., Baxter J.D., Bell G.I., Eberhardt N.L.;  
RT "Analysis of a major human chorionic somatomammotropin gene. Evidence  
RT for two functional promoter elements.";  
RL J. Biol. Chem. 259:13131-13138(1984).  
RN [2]  
RP SEQUENCE FROM N.A. (GENE CSH2).  
RX MEDLINE=87161235; PubMed=3030680;  
RA Hirt H., Kimelman J., Birnbaum M.J., Chen E.Y., Seeburg P.H.,

RA Eberhardt N.L., Barta A.;

RT "The human growth hormone gene locus: structure, evolution, and  
RT allelic variations.";

RL DNA 6:59-70(1987).

RN [3]

RP SEQUENCE FROM N.A.

RX MEDLINE=83160916; PubMed=6300056;

RA Barrera-Saldana H.A., Seeburg P.H., Saunders G.F.;

RT "Two structurally different genes produce the same secreted human  
RT placental lactogen hormone.";

RL J. Biol. Chem. 258:3787-3793(1983).

RN [4]

RP SEQUENCE FROM N.A. (GENES CSH1 AND CSH2).

RX MEDLINE=89307277; PubMed=2744760;

RA Chen E.Y., Liao Y.C., Smith D.H., Barrera-Saldana H.A., Gelinas R.E.,  
RA Seeburg P.H.;

RT "The human growth hormone locus: nucleotide sequence, biology, and  
RT evolution.";

RL Genomics 4:479-497(1989).

RN [5]

RP SEQUENCE.

RX MEDLINE=83182010; PubMed=7169009;

RA Seeburg P.H.;

RT "The human growth hormone gene family: nucleotide sequences show  
RT recent divergence and predict a new polypeptide hormone.";

RL DNA 1:239-249(1982).

RN [6]

RP SEQUENCE FROM N.A.

RC TISSUE=Placenta, and Uterus;

RX MEDLINE=22388257; PubMed=12477932;

RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,  
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
RA Schnurch A., Schein J.E., Jones S.J.M., Marra M.A.;

RT "Generation and initial analysis of more than 15,000 full-length  
RT human and mouse cDNA sequences.";

RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903(2002).

RN [7]

RP SEQUENCE OF 50-217 FROM N.A.

RX MEDLINE=78071761; PubMed=593368;

RA Shine J., Seeburg P.H., Martial J.A., Baxter J.D., Goodman H.M.;

RT "Construction and analysis of recombinant DNA for human chorionic  
RT somatomammotropin.";

RL Nature 270:494-499(1977).

RN [8]  
RP SEQUENCE OF 27-217.  
RX MEDLINE=73201971; PubMed=4712450;  
RA Li C.H., Dixon J.S., Chung D.;  
RT "Amino acid sequence of human chorionic somatomammotropin.";  
RL Arch. Biochem. Biophys. 155:95-110(1973).  
RN [9]  
RP SEQUENCE OF 27-117.  
RX MEDLINE=72016313; PubMed=5286363;  
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;  
RT "Amino-acid sequence of human placental lactogen.";  
RL Nature New Biol. 233:59-61(1971).  
RN [10]  
RP ERRATUM.  
RA Sherwood L.M., Handwerger S., McLaurin W.D., Lanner M.;  
RL Nature New Biol. 235:64-64(1972).  
RN [11]  
RP INTERCHAIN DISULFIDE BONDS.  
RX MEDLINE=79173081; PubMed=438159;  
RA Schneider A.B., Kowalski K., Russell J., Sherwood L.M.;  
RT "Identification of the interchain disulfide bonds of dimeric human  
RT placental lactogen.";  
RL J. Biol. Chem. 254:3782-3787(1979).  
CC -!- FUNCTION: Similar to that of somatotropin.  
CC -!- SUBCELLULAR LOCATION: Secreted.  
CC -!- MISCELLANEOUS: The sequence of CSH1 is shown.  
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
CC -----  
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CC or send an email to license@isb-sib.ch).  
CC -----  
DR EMBL; V00573; CAA23836.1; -.  
DR EMBL; J00289; AAA98747.1; -.  
DR EMBL; K02401; AAA52115.1; -.  
DR EMBL; M15894; AAA52116.1; -.  
DR EMBL; J03071; AAA52551.1; -.  
DR EMBL; J00118; AAA98621.1; -.  
DR EMBL; BC002717; AAH02717.1; -.  
DR EMBL; BC005921; AAH05921.1; -.  
DR EMBL; BC020756; AAH20756.1; -.  
DR PIR; A26449; A26449.  
DR PIR; C32435; LCHUC.  
DR HSSP; P01241; 1A22.  
DR Genew; HGNC:2440; CSH1.  
DR Genew; HGNC:2441; CSH2.  
DR MIM; 150200; -.  
DR GO; GO:0007565; P:pregnancy; TAS.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.

KW Hormone; Placenta; Multigene family; Signal.  
 FT SIGNAL 1 26  
 FT CHAIN 27 217 LACTOGEN.  
 FT DISULFID 79 191  
 FT DISULFID 208 215  
 FT DISULFID 208 208 INTERCHAIN (WITH C-215 IN A DIMER).  
 FT DISULFID 215 215 INTERCHAIN (WITH C-208 IN A DIMER).  
 FT VARIANT 3 3 P -> A (IN CSH2).  
 FT /FTId=VAR\_007166.  
 FT VARIANT 104 105 IS -> L (IN CSH2).  
 FT /FTId=VAR\_007167.  
 FT CONFLICT 84 84 I -> T (IN REF. 9).  
 FT CONFLICT 95 95 MISSING (IN REF. 9).  
 FT CONFLICT 116 116 MISSING (IN REF. 9).  
 FT CONFLICT 134 136 SDD -> BBS (IN REF. 9).  
 SQ SEQUENCE 217 AA; 25020 MW; 235B0DC7A713F431 CRC64;

Query Match 75.8%; Score 197; DB 1; Length 217;  
Best Local Similarity 80.0%; Pred. No. 1.e-17;  
Matches 36; Conservative 5; Mismatches 4; Indels 0; Gaps 0;

Qy 4 TIPLSRLFDNAMLRAHRLHQIADFQEFEEAYIPKEQKYSFLQN 48  
|:|||||:|||:|||:|||:|||:|||:|||:|||:|||:|||:|||:|||:|||:  
Db 29 TVPLSRLFDHAMLQAHRAHQLAIDTYQEFEETYIPKDOKYSFLHD 73

RESULT 10  
SOMA\_MOUSE  
ID SOMA\_MOUSE STANDARD; PRT; 216 AA.  
AC P06880;  
DT 01-JAN-1988 (Rel. 06, Created)  
DT 01-JAN-1988 (Rel. 06, Last sequence update)  
DT 15-MAR-2004 (Rel. 43, Last annotation update)  
DE Somatotropin precursor (Growth hormone).  
GN GH1 OR GH.  
OS Mus musculus (Mouse).  
OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
OC Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.  
OX NCBI\_TaxID=10090;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=85261358; PubMed=2991252;  
RA Linzer D.I.H., Talamantes F.;  
RT "Nucleotide sequence of mouse prolactin and growth hormone mRNAs and  
RT expression of these mRNAs during pregnancy.";  
RL J. Biol. Chem. 260:9574-9579(1985).  
RN [2]  
RP SEQUENCE FROM N.A.  
RC STRAIN=FZTDU; TISSUE=Liver;  
RX MEDLINE=96194803; PubMed=8647448;  
RA Das P., Meyer L., Seyfert H.-M., Brockmann G., Schwerin M.;  
RT "Structure of the growth hormone-encoding gene and its promoter in  
RT mice.";  
RL Gene 169:209-213(1996).  
RN [3]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Pituitary;

RX MEDLINE=22388257; PubMed=12477932;  
RA Strausberg R.L., Feingold E.A., Grouse L.H., Derge J.G.,  
RA Klausner R.D., Collins F.S., Wagner L., Shenmen C.M., Schuler G.D.,  
RA Altschul S.F., Zeeberg B., Buetow K.H., Schaefer C.F., Bhat N.K.,  
RA Hopkins R.F., Jordan H., Moore T., Max S.I., Wang J., Hsieh F.,  
RA Diatchenko L., Marusina K., Farmer A.A., Rubin G.M., Hong L.,  
RA Stapleton M., Soares M.B., Bonaldo M.F., Casavant T.L., Scheetz T.E.,  
RA Brownstein M.J., Usdin T.B., Toshiyuki S., Carninci P., Prange C.,  
RA Raha S.S., Loquellano N.A., Peters G.J., Abramson R.D., Mullahy S.J.,  
RA Bosak S.A., McEwan P.J., McKernan K.J., Malek J.A., Gunaratne P.H.,  
RA Richards S., Worley K.C., Hale S., Garcia A.M., Gay L.J., Hulyk S.W.,  
RA Villalon D.K., Muzny D.M., Sodergren E.J., Lu X., Gibbs R.A.,  
RA Fahey J., Helton E., Ketteman M., Madan A., Rodrigues S., Sanchez A.,  
RA Whiting M., Madan A., Young A.C., Shevchenko Y., Bouffard G.G.,  
RA Blakesley R.W., Touchman J.W., Green E.D., Dickson M.C.,  
RA Rodriguez A.C., Grimwood J., Schmutz J., Myers R.M.,  
RA Butterfield Y.S.N., Krzywinski M.I., Skalska U., Smailus D.E.,  
RA Schnurch A., Schein J.E., Jones S.J.M., Marra M.A.;  
RT "Generation and initial analysis of more than 15,000 full-length  
RT human and mouse cDNA sequences.";  
RL Proc. Natl. Acad. Sci. U.S.A. 99:16899-16903 (2002).  
CC -!- FUNCTION: Plays an important role in growth control. Its major  
CC role in stimulating body growth is to stimulate the liver and  
CC other tissues to secrete IGF-1. It stimulates both the  
CC differentiation and proliferation of myoblasts. It also stimulates  
CC amino acid uptake and protein synthesis in muscle and other  
CC tissues.  
CC -!- SUBCELLULAR LOCATION: Secreted.  
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
CC -----  
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CC or send an email to license@isb-sib.ch).  
CC -----  
DR EMBL; X02891; CAA26650.1; -.  
DR EMBL; Z46663; CAA86658.1; -.  
DR EMBL; BC061157; AAH61157.1; -.  
DR PIR; B23911; STMS.  
DR HSSP; P01246; 1BST.  
DR MGD; MGI:95707; Gh.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Pituitary; Signal.  
FT SIGNAL 1 26 BY SIMILARITY.  
FT CHAIN 27 216 SOMATOTROPIN.  
FT DISULFID 78 189 BY SIMILARITY.  
FT DISULFID 206 214 BY SIMILARITY.  
SQ SEQUENCE 216 AA; 24716 MW; 98666A3AE25D65FC CRC64;

Query Match

62.1%; Score 161.5; DB 1; Length 216;

Best Local Similarity 68.1%; Pred. No. 3.3e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQIQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| ||||:||| ||||: ||:|| :|||  
Db 27 FPAMPLSSLFSNAVLRAQHLHQIQLAADTYKEFERAYIPEGQRYS-IQN 72

RESULT 11

SOMA\_BALBO

ID SOMA\_BALBO STANDARD; PRT; 190 AA.

AC P33092;

DT 01-OCT-1993 (Rel. 27, Created)

DT 01-OCT-1993 (Rel. 27, Last sequence update)

DT 28-FEB-2003 (Rel. 41, Last annotation update)

DE Somatotropin (Growth hormone).

GN GH1.

OS Balaenoptera borealis (Sei whale).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Cetartiodactyla; Cetacea; Mysticeti;

OC Balaenopteridae; Balaenoptera.

OX NCBI\_TaxID=9768;

RN [1]

RP SEQUENCE.

RX MEDLINE=83000569; PubMed=7115813;

RA Yudaev N.A., Pankov Y.A., Bulatov A.A., Osipova T.A.;

RT "Amino acid sequence of seiwhale somatotropin.";

RL Biokhimiia 47:1059-1069(1982).

RN [2]

RP PRELIMINARY PARTIAL SEQUENCE.

RA Osipova T.A., Bulatov A.A., Pankov Y.A.;

RT "Structural studies of tryptic peptides from large cyanogen bromide

fragments of sei whale (Balalnoptera borealis) somatotropin.";

RL Bioorg. Khim. 4:1589-1599(1978).

CC -!- FUNCTION: Plays an important role in growth control. Its major  
CC role in stimulating body growth is to stimulate the liver and  
CC other tissues to secrete IGF-1. It stimulates both the  
CC differentiation and proliferation of myoblasts. It also stimulates  
CC amino acid uptake and protein synthesis in muscle and other  
CC tissues.

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

DR PIR; JN0387; JN0387.

DR PIR; PN0140; PN0140.

DR HSSP; P01241; 1AXI.

DR InterPro; IPR001400; Somatotropin.

DR Pfam; PF00103; hormone; 1.

DR PRINTS; PR00836; SOMATOTROPIN.

DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.

DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.

KW Hormone; Pituitary.

FT DISULFID 52 163 BY SIMILARITY.

FT DISULFID 180 188 BY SIMILARITY.

SQ SEQUENCE 190 AA; 21835 MW; 09FBFF6DB14A75D6 CRC64;

Query Match 61.7%; Score 160.5; DB 1; Length 190;

Best Local Similarity 68.1%; Pred. No. 3.9e-13;

Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
 Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQN 48  
     || :||| || ||:||| ||||| ||||:||| ||||: ||:|| |||||  
 Db 1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRY-FLQN 46

RESULT 12

SOMA\_LOXAF

ID SOMA\_LOXAF STANDARD; PRT; 190 AA.  
 AC P20392;  
 DT 01-FEB-1991 (Rel. 17, Created)  
 DT 01-FEB-1991 (Rel. 17, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin (Growth hormone).  
 GN GH1.  
 OS Loxodonta africana (African elephant).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Proboscidea; Elephantidae; Loxodonta.  
 OX NCBI\_TaxID=9785;  
 RN [1]  
 RP SEQUENCE.  
 RA Hulmes J.D., Miedel M.C., Li C.H., Pan Y.C.E.;  
 RT "Primary structure of elephant growth hormone.";  
 RL Int. J. Pept. Protein Res. 33:368-372(1989).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
     role in stimulating body growth is to stimulate the liver and  
     other tissues to secrete IGF-1. It stimulates both the  
     differentiation and proliferation of myoblasts. It also stimulates  
     amino acid uptake and protein synthesis in muscle and other  
     tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 DR PIR; JK0219; JK0219.  
 DR HSSP; P01246; 1B5T.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary.  
 FT DISULFID 52 163 BY SIMILARITY.  
 FT DISULFID 180 188 BY SIMILARITY.  
 SQ SEQUENCE 190 AA; 21761 MW; 05B860813DB741F2 CRC64;

Query Match 61.3%; Score 159.5; DB 1; Length 190;  
 Best Local Similarity 68.1%; Pred. No. 5.2e-13;  
 Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
 Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEEAYIPKEQKYSFLQN 48  
     || :||| || ||:||| ||||| ||||:||| ||||: ||:|| :|||  
 Db 1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRY-S-IQN 46

RESULT 13

SOMA\_VULVU

ID SOMA\_VULVU STANDARD; PRT; 190 AA.

AC P10766;  
 DT 01-JUL-1989 (Rel. 11, Created)  
 DT 01-JUL-1989 (Rel. 11, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin (Growth hormone).  
 GN GH1.  
 OS Vulpes vulpes (Red fox).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Vulpes.  
 OX NCBI\_TaxID=9627;  
 RN [1]  
 RP SEQUENCE.  
 RC TISSUE=Pituitary;  
 RX MEDLINE=89254275; PubMed=2722401;  
 RA Li C.H., Izdebski J., Chung D.;  
 RT "Primary structure of fox pituitary growth hormone.";  
 RL Int. J. Pept. Protein Res. 33:70-72(1989).  
 CC -!- FUNCTION: Plays an important role in growth control. Its major  
 CC role in stimulating body growth is to stimulate the liver and  
 CC other tissues to secrete IGF-1. It stimulates both the  
 CC differentiation and proliferation of myoblasts. It also stimulates  
 CC amino acid uptake and protein synthesis in muscle and other  
 CC tissues.  
 CC -!- SUBCELLULAR LOCATION: Secreted.  
 CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
 DR HSSP; P01246; 1BST.  
 DR InterPro; IPR001400; Somatotropin.  
 DR Pfam; PF00103; hormone; 1.  
 DR PRINTS; PR00836; SOMATOTROPIN.  
 DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
 DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
 KW Hormone; Pituitary.  
 FT DISULFID 52 163 BY SIMILARITY.  
 FT DISULFID 180 188 BY SIMILARITY.  
 SQ SEQUENCE 190 AA; 21731 MW; 14F37B9C1CBB802C CRC64;

Query Match 61.3%; Score 159.5; DB 1; Length 190;  
 Best Local Similarity 68.1%; Pred. No. 5.2e-13;  
 Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;  
 QY 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
 || :||| || ||:||| ||||| ||||:||| ||||: ||:|| :|||  
 Db 1 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 46

RESULT 14  
 SOMA\_CANFA  
 ID SOMA\_CANFA STANDARD; PRT; 216 AA.  
 AC P33711; Q9TQT6;  
 DT 01-FEB-1994 (Rel. 28, Created)  
 DT 16-OCT-2001 (Rel. 40, Last sequence update)  
 DT 28-FEB-2003 (Rel. 41, Last annotation update)  
 DE Somatotropin precursor (Growth hormone).  
 GN GH1 OR GH.  
 OS Canis familiaris (Dog).  
 OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;  
 OC Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.

OX NCBI\_TaxID=9615;  
RN [1]  
RP SEQUENCE FROM N.A.  
RX MEDLINE=94266166; PubMed=8206387;  
RA Ascacio-Martinez J.A., Barrera-Saldana H.A.;  
RT "A dog growth hormone cDNA codes for a mature protein identical to  
RT pig growth hormone.";  
RL Gene 143:277-280(1994).  
RN [2]  
RP SEQUENCE FROM N.A.  
RA van Leeuwen I.S., Teske E., van Garderen E., Rutteman G.R., Mol J.A.;  
RT "Extrapancreatic growth hormone expression in the dog is initiated at  
RT the normal pituitary transcription start site in the mammary gland and  
RT at multiple upstream sites in lymphoid cells.";  
RL Submitted (MAR-1997) to the EMBL/GenBank/DDBJ databases.  
RN [3]  
RP SEQUENCE FROM N.A.  
RC TISSUE=Mammary gland;  
RX MEDLINE=99337113; PubMed=10411306;  
RA Lantinga-van Leeuwen I.S., Oudshoorn M., Mol J.A.;  
RT "Canine mammary growth hormone gene transcription initiates at the  
RT pituitary-specific start site in the absence of Pit-1.";  
RL Mol. Cell. Endocrinol. 150:121-128(1999).  
CC -!- FUNCTION: Plays an important role in growth control. Its major  
CC role in stimulating body growth is to stimulate the liver and  
CC other tissues to secrete IGF-1. It stimulates both the  
CC differentiation and proliferation of myoblasts. It also stimulates  
CC amino acid uptake and protein synthesis in muscle and other  
CC tissues.  
CC -!- SUBCELLULAR LOCATION: Secreted.  
CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.  
CC -----  
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CC -----  
DR EMBL; Z23067; CAA80601.1; -.  
DR EMBL; U92533; AAF21502.1; -.  
DR EMBL; AF069071; AAD43366.1; -.  
DR PIR; I46145; I46145.  
DR HSSP; P01246; 1BST.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Pituitary; Signal.  
FT SIGNAL 1 26 BY SIMILARITY.  
FT CHAIN 27 216 SOMATOTROPIN.  
FT DISULFID 78 189 BY SIMILARITY.  
FT DISULFID 206 214 BY SIMILARITY.  
FT CONFLICT 4 4 S -> G (IN REF. 1).  
FT CONFLICT 7 7 N -> T (IN REF. 1).

SQ SEQUENCE 216 AA; 24468 MW; A8AD1DD59F1DAAED CRC64;

Query Match 61.3%; Score 159.5; DB 1; Length 216;  
Best Local Similarity 68.1%; Pred. No. 6e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

QY 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| ||||:||| ||||: ||:|| :|||  
Db 27 FPAMPLSSLFANAVLRAQHLHQLAADTYKEFERAYIPEGQRYS-IQN 72

RESULT 15

SOMA\_FELCA

ID SOMA\_FELCA STANDARD; PRT; 216 AA.

AC P46404;

DT 01-NOV-1995 (Rel. 32, Created)

DT 01-NOV-1995 (Rel. 32, Last sequence update)

DT 28-FEB-2003 (Rel. 41, Last annotation update)

DE Somatotropin precursor (Growth hormone).

GN GH1.

OS Felis silvestris catus (Cat).

OC Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;

OC Mammalia; Eutheria; Carnivora; Fissipedia; Felidae; Felis.

OX NCBI\_TaxID=9685;

RN [1]

RP SEQUENCE FROM N.A.

RC TISSUE=Pituitary;

RX MEDLINE=96194906; PubMed=8654953;

RA Warren W.C., Bentle K.A., Bogosian G.;

RT "Cloning of the cDNAs coding for cat growth hormone and prolactin.";

RL Gene 168:247-249(1996).

RN [2]

RP SEQUENCE FROM N.A.

RC TISSUE=Pituitary;

RX MEDLINE=95369713; PubMed=7642118;

RA Castro-Peralta F., Barrera-Saldana H.A.;

RT "Cloning and sequencing of cDNA encoding the cat growth hormone.";

RL Gene 160:311-312(1995).

CC -!- FUNCTION: Plays an important role in growth control. Its major role in stimulating body growth is to stimulate the liver and other tissues to secrete IGF-1. It stimulates both the differentiation and proliferation of myoblasts. It also stimulates amino acid uptake and protein synthesis in muscle and other tissues.

CC -!- SUBCELLULAR LOCATION: Secreted.

CC -!- SIMILARITY: Belongs to the somatotropin/prolactin family.

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DR EMBL; U25973; AAA67294.1; -.

DR EMBL; U13390; AAA96142.1; -.

DR PIR; JC4632; JC4632.  
DR HSSP; P01246; 1BST.  
DR InterPro; IPR001400; Somatotropin.  
DR Pfam; PF00103; hormone; 1.  
DR PRINTS; PR00836; SOMATOTROPIN.  
DR PROSITE; PS00266; SOMATOTROPIN\_1; 1.  
DR PROSITE; PS00338; SOMATOTROPIN\_2; 1.  
KW Hormone; Pituitary; Signal.  
FT SIGNAL 1 26 BY SIMILARITY.  
FT CHAIN 27 216 SOMATOTROPIN.  
FT DISULFID 78 189 BY SIMILARITY.  
FT DISULFID 206 214 BY SIMILARITY.  
FT CONFLICT 7 7 N -> T (IN REF. 2).  
FT CONFLICT 26 26 T -> A (IN REF. 2).  
FT CONFLICT 159 159 G -> A (IN REF. 2).  
FT CONFLICT 181 181 L -> P (IN REF. 2).  
SQ SEQUENCE 216 AA; 24454 MW; 05820239A7D292C6 CRC64;

Query Match 61.3%; Score 159.5; DB 1; Length 216;  
Best Local Similarity 68.1%; Pred. No. 6e-13;  
Matches 32; Conservative 6; Mismatches 8; Indels 1; Gaps 1;

Qy 2 FPTIPLSRLFDNAMLRAHRLHQQLAFDTYQEFEAYIPKEQKYSFLQN 48  
|| :||| || ||:||| ||||| ||||:||| ||||: ||:|| :|||  
Db 27 FPAMPLSSLFANAVLRAQHLHQQLAADTYKEFERAYIPEGQRYS-IQN 72

Search completed: July 15, 2004, 16:36:24  
Job time : 10.3825 secs